

SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *On the Physiology of the Human Voice.*—By JOHN BISHOP, Esq. After premising a brief description of the system of organs which are subservient to the voice, the author proceeds to consider the several theories which have been devised to account for its various modifications. These theories have for the most part been founded on the laws which regulate the vibratory movements of streaked membranous surfaces; and the investigation of those laws has accordingly occupied the attention of many eminent mathematicians, such as Euler, Bernoulli, Riccati, Biot, Poisson and Herschel; but it is a subject requiring the most profound analysis, and involving the resolution of problems of much greater complexity than the laws of the vibrations of either strings or bars. The assumptions which are necessary in order to bring the subject within the reach of analysis, namely, that the membrane is homogeneous in its substance, and of equal thickness and elasticity throughout its whole extent, are at variance with the actual conditions of the vocal organs, which are composed of tissues differing in thickness, density, and elasticity, and of which the tension is indeterminate; circumstances which present insuperable obstacles to the attainment of a mathematical theory of their vibrations.

The author, after giving a critical account of the experiments made by Biot, Willis, Müller, Cagnaret la Tour, and De Kempelin, on the vibrations of membranous laminae, examines the various actions of the vocal organs during the production of the more simple tones; and considers more especially the office of the vocal ligaments, in regulating the pitch of the voice, which he considers as resulting from variations in their length and tension conjointly. By applying to the chordæ vocales, the formulæ of vibrating chords, he traces the influence which is exerted on their movements by the mucous membranes; and finds that they obey, to a certain extent, the laws of vibratory strings.

The analogy between the action of the glottis and that of a reed is next examined, and an opinion expressed that the movements of the glottis in the vocalization of the sound partake of the nature of the reed during the partial opening and shutting of the rima glottidis.

The author next investigates the acoustic relations between the actions of the glottis and that of the vocal pipe, and the acoustic effects of flexible membranous tubes on a column of air vibrating within it, and finds that the structure of the trachea, and of the soft parts above and below the larynx, is adapted to vibrate synchronously with any note that may be formed in the larynx. The falsetto voice may be produced either by the partial closing of the glottis, or by a nodal division of the vocal chords, the pitch of the sound in the production of this peculiar modification of the voice being such, that the column of air in the vocal tube is of the precise length requisite to vibrate in unison with the larynx. The inquiry is further extended to the sources of the various tones of the voice, in sing-

ing, such as the bass, tenor, contralto, and soprano; together with their subdivisions of barytone, mezzo-soprano, and soprano-sfogata; and to the places which they occupy in the musical scale. Independently of the falsetto, the compass of the natural voice rarely exceeds two octaves; although in some cases, as in those of Malibran and Catalani, it may extend even beyond three. The voice in singing, is modulated by the contraction or relaxation of the velum, uvula and fauces. The author lastly adverts to the attempts that have, at various times, been made by the Abbé Mical, Faber, Kratzenstein, De Kempelen, Willis, Wheatstone, and others, to imitate articulate sounds by mechanism.

Having thus examined the human voice as resulting from the vibration of membranous ligaments, in obedience, first, to the laws of musical strings; secondly, to those of reeded instruments; and thirdly, to those of membranous pipes; he arrives at the conclusion, that the vocal organs combine, in reality, the actions of each of these instruments, and exhibit in conjunction, the perfect type of every one of them.—*Proceedings of Royal Society*, No. 65.

2. *On the Anatomy and Physiology of the Vascular Fringes in Joints and the Sheaths of Tendons.*—By GEORGE RAINEY, Esq. It has been generally believed that the folds of synovial membrane, which project into the articular cavities in the form of fringes, contain merely globules of fat, and are subservient only to the mechanical offices of filling up spaces that would otherwise be left vacant during the movements of the joints. By a careful examination of their real structure, with the aid of the microscope, the author has found that they present an arrangement of vessels quite peculiar to themselves, and bearing no resemblance whatever to that of the vessels which secrete fat; together with an epithelium, remarkable by its form and disposition, and characteristic of organs endowed with the function of a special secretion. He has traced the presence of these synovial fringes in all cavities which contain synovia; that is to say, not only in the joints, but also in the sheaths of tendons, and in the bursæ mucosæ. When well injected, they are seen under the microscope, to consist of two parts; namely, a convolution of blood-vessels, and an investing epithelium. These convoluted vessels do not enclose, by their anastomoses, spaces like those capillaries which secrete fat, and which are of a much smaller size than the former; and the epithelial investments, besides enclosing separately each packet of convoluted vessels, send off from each tubular sheath secondary processes of various shapes, into which no blood-vessels enter. The lamina itself, forming these folds and processes, consists of a very thin membrane studded with flattish oval cells, a little larger than blood corpuscles, but destitute of nucleus or nucleoli; presenting none of the characters of tessellated epithelium, but corresponding more to what Mr. Goodsir has termed germinal membrane. From all these facts, the author concludes that the proper office of this structure is to secrete synovia; an office which Clopton Havers had assigned to them, as long ago as the year 1691, although his opinion has not been generally adopted by later physiologists.—*Proceedings of Royal Society*, No. 65.

3. *Functions of the Pneumogastric Nerves.*—M. SANDRAS read to the Academy of Sciences of France, January 18th, a memoir, the joint labour of himself and M. Bouchardat, the object of which was to determine the importance of the pneumogastric nerves in the process of digestion. With this view they instituted a series of researches to ascertain:—

1. The manner of dying in animals in whom the pneumogastric nerves have been divided.

2. The function of these nerves in digestion.

3. Their function as regards the production and absorption of chyle.

4. Their function in reference to the digestion of fecula.

As a secondary point they wished to determine whether, and how, the divided nerves are capable of uniting. Their experiments are arranged in two series, one having reference to the phenomenon attendant upon the entire section of the nerves; the second taking account of the results of successive divisions of the nerves. The simultaneous section of both nerves gives rise to phenomena which establish the following facts:—

1. Rabbits and dogs do not die immediately when a piece of the nerve of twenty

millimeters in length is removed opposite the cricoid cartilage. These animals may survive several days without great distress.

2. In animals thus operated upon the food passes the cardia in small quantity or not at all.

3. In dogs, although digestion has commenced, it is arrested by division of the nerves.

4. The digestion of amylaceous matters in the intestines is not materially interfered with.

5. These nerves are essentially motor.

The second class of experiments proves:—

1. That dogs survive four or six days after the section of the second nerve, and sixteen or seventeen after that of the first, when the two nerves are divided at different times.

2. That animals thus treated eat with avidity, but do not exhibit an unintelligent voracity. They cease to feed as soon as the *œsophagus* becomes distended.

To recapitulate, the authors consider that they have established that the *movements of the stomach and digestion* are interrupted by the simultaneous section of both nerves in the neck; and that *intestinal digestion* continues in spite of this division.

4. *Formation and Structure of Membrana decidua.*—The account which Dr. SHARPEY gave of the formation and structure of the *membrana decidua* in the uterus of the bitch, and which he inferred might apply to this membrane in the case of the human female, as also of all viviparous animals, has been amply confirmed by Bischoff. (*Müller's Archiv.* Heft ii., 1846, p. 111.) Having had the opportunity of examining the uterus of a woman supposed to have been impregnated about three weeks before death, he was enabled to demonstrate quite satisfactorily, that, as Dr. Sharpey had suggested, the *membrana decidua*, in the human female as in the bitch, is merely the ordinary mucous membrane of the uterus, considerably developed, and that it consists essentially of enlarged uterine follicles and their blood-vessels, together with an unusually large quantity of secretion which these follicles have poured out.* The internal surface of the uterus presented an appearance quite different from its ordinary one, being finely villous; and this was especially evident on placing it in water, or examining perpendicular sections of it. The surface itself, when looked upon from above, appeared as if perforated by a number of small apertures, or covered with numerous white points, and these, when examined by the microscope, were found to be the openings of cylindrical glandules. These glandules, or follicles, were from $1\frac{1}{2}$ to 2 Paris lines in length, were held together by a transparent material, and terminated each by a blind extremity, which rested on the fibrous tissue of the uterus. They ran a somewhat wavy course, but never branched or anastomosed. Previous to impregnation it seems to be exceedingly difficult to discover these glands in the mucous membrane of the uterus. Probably they then exist in a very undeveloped state, but immediately on the occurrence of conception increase rapidly, and exude an abundant secretion. Of these glands and their secretion (together with blood-vessels) the *membrana decidua* and later on the placenta essentially consist. The statement that a *membrana decidua* exists in the Fallopian tube, as well as in the uterus, in cases of Fallopian impregnation, Bischoff combats, by observing that so far as has yet been seen, the lining membrane of the Fallopian tube contains no glands by which the formation of a structure corresponding to an ordinary *membrana decidua* could be effected. A similar view to the above, in regard to the nature of the *membrana decidua*, has been advocated also by M. Courtz, (*Archives d'Anat. Gén. et de Physiol.*, Sept. 1846,) who considers this structure to be merely a somewhat altered condition of the mucous membrane of the uterus.

A description of the mucous or lining membrane of the uterus, in the unimpregnated state, has been furnished by M. Deschamps. (*Gaz. Méd.*, Aout 15, 29, 1846.†) He states that this membrane, when carefully dissected off, appears as a

* For a full account of Dr. Sharpey's investigations, see Müller's Physiology by Baly, 2d edit., vol. ii., p. 1574.

† In this essay M. Deschamps gives a brief account of the various views which have been entertained by different writers on the nature and purposes of the *membrana decidua*.

whitish, very delicate, and friable structure; it is continuous above with the membrane lining the Fallopian tubes, and below, at the neck of the uterus, it is united with the mucous membrane of the vagina. He mentions also, that with a lens he has distinctly observed the free surface of the membrane to be finely villous, owing to the number of minute follicular glands with which it is beset; from the orifices of these he observed a viscid fluid to exude on pressure. This fluid, with which the interior of the uterus is moistened, possesses all the ordinary characters of mucus.—(*Kirke's Report*, in *Ranking's Abstract*, vol. iv.)

ORGANIC CHEMISTRY.

5. *On Creatine and its Office in the Animal Economy—and on Creatinine.* By J. LIEBIG.—(Extract from a letter to Gay-Lussac, read to the French Academy of Sciences, January 18, 1847.)

It has been long known that the flesh of newly killed animals has a distinct acid reaction. Berzelius has ascribed this property to the presence of lactic acid, a statement never yet confirmed. Several chemists have admitted the existence of lactic acid in the urine, in the gastric juice and in the milk, but the tests relied on in this conclusion, are far from being certain evidence. The researches of Liebig were made with the design of removing all uncertainty as to the organic acid which forms a part of the animal organism.

When the flesh of newly killed animals, finely minced, is washed with cold water, a reddish liquid is obtained, which when subjected to a boiling heat, affords a coagulum of albumen, and becomes almost entirely colourless. The limpid liquor thus obtained, almost imperceptibly yellowish, has a very decided acid character, and a pleasant, very aromatic soup-taste. When it is neutralized by solution of baryta, phosphate of baryta, and phosphates of magnesia are thrown down, it becomes slightly alkaline, though no baryta remain in the fluid. After the separation of the precipitates, and a proper degree of evaporation, crystals of *Creatine*, the substance found by Chevreul in meat soup, are obtained.

The results of this analysis can leave no doubt of the nature of the non-volatile organic acid existing throughout the animal organism. Thus the acid reaction of the muscles is explained; and now that we know that in a great part of the animal frame there exists an acid liquid, which is separated from an alkaline fluid (the blood and the lymph) merely by very fine membranes, it seems easy to explain several electric phenomena observed on the bodies of dead animals, by Matteucci and other physiologists.

By operating on hundred weights of flesh, Liebig has obtained a quantity of Creatine sufficient to ensure an exact examination.

He thinks his experiments warrant him in concluding that Creatine forms part of the flesh of all classes of animals. He has already determined its presence in beef, veal, mutton, pork, horse-flesh, hare, chicken, and pike. The important discovery of Chevreul, who has described the properties of this substance with much precision, becomes the more interesting, because it cannot be doubted that Creatine performs some indispensable office in the actions of life. It is certain at least, that meat-soup can be replaced neither by gelatine nor any liquid besides, drawn from any other part of the animal body except the muscles. Liebig has found Creatine in the heart of the ox, but not in the brain, the liver, the lung, or the kidney.

Creatine belongs to the klinorhomboidal system of crystallization; it is a neutral body which dissolves in alkaline liquids or weak acids, and may be withdrawn from these again without having undergone any change. But when concentrated acids or caustic alkalis are present, its properties become altered. By strong acids Creatine is transformed into an organic base, having very remarkable properties. The substance combined with the acid is no longer Creatine, and cannot again be transformed into that body; it is a new substance which Liebig proposes to term *Creatinine*, and which, by the agency of the hydrochloric and sulphuric acids, is produced merely by the displacement of four atoms of water.

Creatine contains the elements of glycocolle (the anhydrous product of gelatine),

together with an atom of ammonia; Creatinine, those of caffeine, together with an atom of amidine.

The extracts of all the kinds of flesh on which Liebig has experimented, evaporated to dryness, and calcined at a red heat, leave a white ash which contains nothing but phosphates. The liquids obtained from the muscular substance of the ox and the horse, leave a mixture of alkaline phosphates (of potassa and soda), precipitating the salts of silver yellow, and of pyrophosphates of potassa and of soda, precipitating these white. The muscle of chicken leaves pure pyrophosphates. The relation of the salts of potassa and of soda in the liquids derived from flesh, and in the blood, is very different. For one equivalent of potassa, the blood of the ox contains from 12 to 13 equivalents of soda. This relation is inverse in the watery extract of the flesh of the same animal. The blood of the horse contains for one equivalent of potassa, 3.62 equivalents of soda. For the same quantity of soda, the flesh of the same horse contains 61.9 equivalents of potassa. These relations will lead to some important conclusion; for it is to be remembered, that in the milk it is the salts of potassa which predominate. If a salt of soda (a phosphate of soda) be really indispensably necessary to the constitution of the blood in many animals, it should follow that the addition of chloride of sodium to the food of these animals, is equally necessary and indispensable in all those places, as in many districts of Germany, where the plants of the pasture do not contain phosphate of soda, or salts of soda. It is easily conceived that the chloride of sodium by reciprocal decomposition with the phosphate of potassa (which is the predominant salt in our nutritive grains), should furnish phosphate of soda, and chloride of potassium; and this last salt is never absent in the liquids derived from flesh.—*Gazette Médicale de Paris*, Jan. 23d, 1847.

6. *On the Characters of the Blood in Cancerous Diseases.* By Dr. HELLER.—In a former number of this Journal, (Jan 1847, p. 137,) were published some observations by Dr. Heller, on the chemical and microscopic characters of the blood in cancerous affections of the uterus. The substance of these observations went to show, among other points, that in such diseases there is invariably an absolute and relative increase in the amount of fibrin in the blood, and a considerable diminution in the quantity of blood-corpuscles. Dr. Heller has recently investigated the subject further, with the view of determining whether similar changes in composition are undergone by the blood in cancerous affections of other organs as well as of the uterus. He examined portions of blood drawn from a woman affected with hard cancer of the breast; from another woman who had malignant ulcers on the head and neck, and malignant deposit in various parts of the body as shown after death: and from a man affected with cancer of the lip. The analysis of these three kinds of blood showed that in each case there was a similar increase in the quantity of fibrin, and in a similar diminution in the quantity of blood-corpuscles, as was found to exist in the case of malignant affections of the uterus.

There was an equally close resemblance also in the microscopical characters of the blood in these two sets of cases; with the exception, however, that in the present cases there were observed none of those crystalline shining particles which were described in the former paper. These particles Dr. Heller now believes to be composed of fat. He has found them also in blood drawn from patients suffering from other than these malignant affections of the uterus, especially puerperal phlebitis: with regard to the large colourless cells which he found in the blood both in the present and the former series of cases, and which he formerly regarded as true cancer-cells, he is now disposed to consider these merely as the pale corpuscles of the blood altered by the action of the water employed in the process necessary to demonstrate their existence.—*London Med. Gazette*, May, 1847, from *Heller's Archiv.*, 1846.

MATERIA MEDICA AND PHARMACY.

7. *Acid Nitrate of Mercury*.—Dr. NELIGAN gives the following as the formula for the preparation of this new and useful preparation:—Take of pure mercury, 100 parts; commercial nitric acid, (density about 1380,) 200 parts: dissolve the mercury in the acid with the aid of heat, and evaporate the solution until it is reduced to 225 parts.

"This preparation contains about seventy-one per cent. of nitrate of mercury with an excess of nitric acid. It is a powerful caustic, and is very much employed in the present day on the Continent to destroy malignant ulcerations, particularly when of a cancerous character. It is applied by means of a camel's hair pencil, and the parts are then covered with lint."—*Medicines, their Uses, and Mode of Administration*, &c.

8. *Valerianate of Zinc*.—Dr. NELIGAN gives the following account of the mode of preparing, and medical properties of this new remedy.

Preparation.—"Take of the bruised root of valerian, two pounds; water, eight pounds; sulphuric acid, three ounces, one drachm: macerate for two days, and distil until the liquid no longer reddens bibulous paper. Let the distilled liquor be then exposed to the air for a month, at the end of which time, put it into a matrass, with half an ounce of recently precipitated, perfectly pure, hydrated oxide of zinc, and digest for from eight to ten hours on a sand-bath, heated to 176° F., stirring occasionally. Filter the warm liquor, evaporate it to three-fourths of its volume, pour into porcelain capsules, and expose to the heat of a stove until crystals are formed, which are to be dried with filtering paper.—BRUS Buisson."

"*Therapeutical Effects*.—Valerianate of zinc is a tonic antispasmodic of much power, and as such is peculiarly adapted for the treatment of neuralgic affections, which are so generally dependent on loss of tone in the system. It has been found especially useful in the treatment of facial neuralgia and of vertigo; but I have seen it prove equally beneficial in most of the Protean forms of hysterical neuralgia. In short, I look on it as one of the most valuable modern additions to the materia medica; and I fully agree with the observations of Devay, that the chemical combination proves much more beneficial than the oil of valerian and oxide of zinc prescribed together.

"*Dose and Mode of Administration*.—The dose of it is from three-fourths of a grain to one grain twice or three times a day: it may be prescribed in the form of pill made with a little mucilage or conserve of red roses, or in solution in orange-flower water, or in distilled water flavoured with syrup of orange-flowers. The compounder must bear in mind that the crystals of valerianate of zinc do not dissolve readily in cold water, floating on the surface in consequence of their lightness; they should therefore be first incorporated with a few drops of water in a mortar.

"*Incompatibles*.—All acids; the soluble carbonates; most metallic salts; and astringent vegetable infusions or decoctions."—*Ibid.*

9. *Red Pepper*.—The Spanish pepper (*Aji*) is found only on the coast, and in the mild woody regions of Peru.

There are many species of the pepper, (*Capsicum annum, baccatum, frutescens*, &c.) which are sometimes eaten green, and sometimes dried and pounded. In Peru, the consumption of aji is greater than that of salt, for with two-thirds of the dishes brought to table, more of the former than of the latter is used. It is worthy of remark, that salt diminishes, in a very striking degree, the pungency of the aji, and it is still more remarkable that the use of the latter, which in a manner, may be called a superfluity, has no injurious effects on the digestive organs. If two pods of aji, steeped in warm vinegar, are laid as a sinapism on the skin, in the space of a quarter of an hour the part becomes red, and the pain intolerable; within an hour, the scarf skin will be removed. Yet, I have frequently eaten twelve or fifteen of these pods, without experiencing the least injurious effect. However,

before I accustomed myself to this luxury, it used to affect me with slight symptoms of gastritis.—*Dr. Tschudi's Travels in Peru.*

10. *Rhatany*.—Between the Cordilleras and the Andes, at the height of 12,000 feet above the sea, there are vast tracts of uninhabited table lands. These are called in the Quichua language, the Puna. The aspect is singularly monotonous and dreary. The expansive levels are scantily covered with grasses of a yellowish-brown hue, and are never enlivened by fresh looking verdure. Here and there, at distant intervals, may be seen a few studded Quenua trees, (*Polylepis racetrifolia*,) or large patches of ground covered with the Ratanhia shrub, (*Krameria triandria*.)

From the most remote times, the Ratanhia has been employed by the Indians as a medicine. It is one of their favourite remedies against spitting of blood, and dysentery.

Most of the Ratanhia exported to Europe, is obtained in the southern provinces of Peru, particularly in Arica and Islay. The extract which is prepared in Peru, and which was formerly sent in large quantities to Europe, is scarcely an object of traffic. For several years past, no Ratanhia has been shipped from Callao, and but very little from Truxillo.—*Ibid.*

11. *Peruvian Bark*.—In the month of May, the Indians assemble to collect the Peruvian bark, for which purpose, they repair to the extensive Cinchona woods. One of the party climbs a high tree, to obtain, if possible, an uninterrupted view over the forest, and to spy out the *Manchas* or spots, where there are groups of Peruvian Bark trees. The men who thus spy out the trees, are called *Cateadores*, or searchers. It requires great experience to single out, in the dark leaf-covered expanse, the Cinchona groups merely by the particular tint of the foliage, which often differs but very little from that of the surrounding trees. As soon as the Cateador has marked out, and correctly fixed upon the *mancha*, he descends to his companions, and leads them with wonderful precision through the almost impenetrable forest to the group. A hut is immediately built, which serves as a resting-place during night, and is also used for drying and preserving the bark. The tree is felled as near the root as possible, divided into pieces, each from three to four feet long, and with a short curved knife, a longitudinal incision is made in the bark.

After a few days, if the pieces are found to be getting dry, the bark already incised is stripped off in long slips, which are placed in the hut, or in hot weather, laid before it to dry. In many parts, particularly in the central and southern districts of Peru, where the moisture is not very great, the bark is dried in the forest, and the slips are packed in large bundles. In other districts, on the contrary, the bark is rolled up green, and sent to the neighbouring villages, where it is dried. Towards the end of September, the Cascarilleros* return to their homes.

In the more early periods of South American History, the bark was a principal article of Peruvian commerce. Since the commencement of the present century its value has, however, considerably diminished, chiefly, in consequence of adulterated and inferior kinds, which are supplied from other quarters; perhaps, also, on account of the more frequent use of quinine; for, in the production of the alkaloids, less bark is employed than was formerly used in substance. During the war of Independence, the bark-trade received its death-blow, and for the space of several years, scarcely more than a few hundred weights of bark were exported from Peru. The montanas of Huanuco, which once furnished all the apothecaries of Europe with the "divine medicine," are beginning again, to yield supplies. From the roots of the felled trees, a vigorous after-growth has commenced. In the montanas of Huamalies, a kind of bark is found, the nature of which is not yet defined by botanists, and from the montanas of Urubamba, comes the highly esteemed *Cascarilla de Cuzco*, which contains an alkaloid, called *cusconin*.† Pos-

* Bark gatherers. The Peruvians called the Bark *Cascarilla*, and they point out the distinctions of a great number of species and varieties.

† From Cuzco, the ancient residence of the Incas. It was discovered by the French chemists, Corriol and Pelletier in the Cascarillo, which is shipped in Arica; hence this alkaloid is also called *Aricin*.

sibly the medicinal bark may again become a flourishing branch of trade for Peru, though it can never again recover the importance which was attached to it a century ago.

During my residence in Peru, a plan was in agitation for establishing a quinine manufactory at Huanuco. The plan, if well carried out, would certainly be attended with success.

There is in Bolivia, an establishment of this kind conducted by a Frenchman: but the quinine produced is very impure. The inhabitants of the Peruvian forests drink an infusion of the green bark as a remedy against intermitting fever. I have found it in many cases much more efficacious than the dried kind, for less than half the usual dose produces, in a short time, convalescence, and the patient is secure against returning febrile attacks.—*Ibid.*

12. *Sea-moss as a Bandage for Fractures.*—Cochino is a small island, only a few miles distant from the Island of Chiloe. It has only one landing place and that is rather insecure for boats. The water of the bay is remarkably clear and good: only round the island and along the harbour, it is covered with an immense quantity of sea-moss, which often renders the landing difficult. It frequently happens that commanders of ships wishing to go on board, to make sail during the night, get out of the right course, and instead of going to the ship, steer to Cochino, and get into the moss, where their boats stick fast, till returning day-light enables them to work their way out.

The poor inhabitants boil this sea-moss, and eat it. It is very salt and slimy, and is difficult of digestion. Among the people of Chiloe, this sea-moss occupies an important place in surgery. When a leg or arm is broken, after bringing the bone into the proper position, a broad layer of the moss is bound round the fractured limb. In drying, this slime causes it to adhere to the skin and thus it forms a fast bandage, which cannot be ruffled or shifted. After the lapse of a few weeks, when the bones have become firmly united, the bandage is loosened by being bathed with tepid water, and it is then easily removed. The Indians of Chiloe were acquainted, long before the French surgeons, with the use of the paste bandage.—*Ibid.*

13. *Physiological effects of Ether.*—The effects of the inhalation of ether, and the mode in which they are produced, form the prevailing subject of investigation, and debate at the French Academy of Sciences. Numerous have been the experiments performed upon the lower animals to determine the effects of ether upon the nervous centres, upon the blood, upon the fœtus in utero, and also upon the actions of the uterus itself, and lastly, upon some of the animal functions.

The chief experiments touching the action of ether upon the nervous centres are those made by Baron FLOURENS, long celebrated for his researches into the functions of the several segments of the brain and spinal cord, by means of vivisection. From his recent experiments with ether, he concludes that its action upon the nervous centres follows a definite course; that it at first acts on the brain, properly so called, (the cerebral hemispheres,) and disorders the intelligence; in the next place, on the cerebellum, and disorders the equilibrium of the movements; it then acts on the medulla oblongata, extinguishing the principle of sensation and motion; and lastly, on the spinal marrow: and having extended its action thus far, extinguishes life. Baron Flourens also observes that hydrochloric ether produces the same effects as the sulphuric. He also considers the phenomena of etherization to resemble asphyxia. To show this he placed some dogs in a certain confined portion of air, and thus asphyxiated them. He then exposed the spinal marrow, and pinched and pricked its sensory and motor columns, but no sensation was evinced, and there were but a few feeble muscular contractions.

M. Roux, on the contrary, from seeing the effects of ether on those operated on surgically, believes that there is not the sequence in their occurrence taught by Baron Flourens; but that they often occur simultaneously; and very frequently consciousness, a readiness in comprehending questions, and in answering them by voluntary gestures, remains till the moment complete sensibility sets in. Further, M. Roux would rather compare the phenomena of ether to intoxication than

to asphyxia. M. Roux narrates a case of traumatic tetanus following upon the removal of a testicle. The ether was administered on the fifth day from the accession of the tetanus, and when that had gone on to a great degree, there being trismus and opisthotonos, and the muscles of the abdomen affected, yet the pulse was tolerably full and regular; but the power of swallowing was lost, and the breathing was embarrassed. The ether-vapour soon brought on somnolency, but this was of short duration. At the moment of waking, which took place without agitation, cold water was sprinkled on him. The patient having regained his consciousness, it was thought that there was some movement of the head, and that there was less stiffness in the muscles of the neck. But almost immediately, or at least after a few seconds, the respiration became short and rapid, the pulse enfeebled, and half an hour had hardly passed, when the patient was no more. His death M. Roux believes to have been hastened by several hours or more by the administration of the vapor of the ether.

M. MANDL communicated, in a note, some observations he had made respecting the action of ether on the peristaltic movements of the intestines. Having produced complete insensibility in a dog, he opened the abdomen, when he observed that the peristaltic motion of the intestines had entirely ceased, nor did mechanical irritation reproduce it. The complete state of etherization lasted for ten minutes, when the dog moved, and his respiration became accelerated. He was then killed. Simultaneously with this there was a general tremor, and some contractions of the cervical muscles: besides this, the peristaltic action of the bowels reappeared, although feebly, and continued for some time.

This seems to show that the ganglionic system may be influenced by the ether equally with the cerebro and spinal systems: and it also supports the hypothesis which regards the ganglionic system as independent of the functions of the spinal cord. Indeed, respiration and circulation, which, according to Baron Flourens, depend on the spinal system, continue, whilst the vermicular motions cease entirely.

M. Ed. Roux states that when ether is inspired in sufficient quantity with atmospheric air, it prevents, in a remarkable manner, the transformation of venous into arterial blood. It so acts, that the red blood, which is the necessary stimulus to the various organs, becomes replaced by venous blood in a great measure, and which produces a stupefying effect. Hence the insensibility and other phenomena observed, where either is effectual in its operations.

M. Robin would explain why the ether opposes the arterialization of the blood in this manner, both from its preventing the impregnation of the blood by the normal amount of air, and from its being burned by the proportion of oxygen which naturally should serve for the production of hæmatosin.—*Lancet*, April 17, 1847.

14. *Ether Vapour Enemata*.—M. PIROGOFF, Professor of Clinical Surgery in St. Petersburg, has been trying some experiments on the effects produced by the injection of ether vapour into the rectum. Having cleared out the rectum by an enema, M. Pirogoff introduces the ether by means of a catheter attached to a syringe, the latter being enclosed in a vessel of water sufficiently heated to convert the ether during its passage into vapour. M. Pirogoff thinks that the narcotizing effects are produced more speedily, and with much less pain and trouble to the patient. It was found that in from two or four minutes the odour of the vapour was perceptible in the breath; and the usual effect is produced on the patient in from three to five minutes. The quantity of ether used in each experiment has varied from half an ounce to two ounces. No injurious symptoms have followed its use in this way, and the most troublesome operations have been performed with great facility.—*Gazette Médicale de Paris*, May 8th, 1847.

M. Velpeau claims for M. Roux, the credit of having first made this observation. M. PARCHAPPE, of Rouen, has since then repeated the experiments on dogs, and has ascertained that when fluid ether was injected in large doses into the intestines, death was rapidly produced; but when the vapour only was introduced into the rectum and colon by means of an appropriate instrument, insensibility was occasioned in a period of time varying between four and ten minutes, with as great perfection as after inspiration into the respiratory organs.

15. *Comparative Utility of the Bromide and Iodide of Potassium, in the treatment of secondary and tertiary forms of Syphilis.* By JOHN EGAN, M. D. (*Dublin Med. Press*, May 19th, 1847.)—The high price which iodine has attained, has induced many practitioners to seek a less costly substitute, and bromine has been recommended for that purpose, and said to possess analogous properties. Dr. EGAN, Surgeon to the Westmoreland Lock Hospital, has experimented pretty largely with this latter article, and in a paper read before the Surgical Society of Ireland, 1st May last, has given the results of his investigations, which by no means confirm the promises held out in its favour.

"To form," says Dr. E., "anything like a correct estimate of its effects, I selected for trial patients similarly affected with those whom I had been accustomed to treat with the iodide of potassium, and have drawn up a statistical table of the results, which has enabled me to institute a comparison between the two modes of treatment. The varieties of disease which I have arranged into four classes were as follows:—

"1st. The eruptive form, comprising the papular, rupial, and scaly varieties.

"2d. Affections of the throat, comprising increased vascularity, ulceration at back of pharynx, and excavated ulcer of the tonsil.

"3d. Osteocopic pains.

"4th. Ulcers of legs.

"In the first or eruptive class there were eighteen cases of the papular variety, of which a cure was accomplished in fourteen after a protracted period. In the remaining four it appeared to exert no effect, and the iodide was eventually substituted.

"In the two cases of rupia, one patient died, worn out by frequent epileptic attacks, in whom the bromide had been used with little benefit for six weeks. In the other, no perceptible alteration was manifested in the symptoms which presented.

"In the scaly variety it failed in one; the other recovered after a lengthened period, desquamation appearing to be the result more of time than the operation of medicine.

"In the second class, consisting of affections of the throat, its use was attended with success in two cases of increased vascularity in which it was employed: on one case of excavated ulcer of the tonsil (the only one from the rarity of this form of disease in which I had an opportunity of testing its effects.) it produced no beneficial result; and out of six cases of ulceration of the pharynx, its protracted use was only productive of advantage in three.

"In eighteen cases of syphilitic pains, success followed in fourteen instances; in the remaining four the iodide was resorted to, to effect a cure. During its administration in this form of the disease, I was frequently obliged to have recourse to anodynes, in order to render the patient insensible to pain, over which for a considerable period it appeared to exert no salutary influence.

"In the fourth class, comprising ulcers of the lower extremities, which might be more properly termed syphilitic cachexia, it produced a beneficial effect in two, but failed in three. The minimum dose employed in these several instances was five grains, the maximum ten, three times a day, beyond which I found it impossible to push it; the vehicle selected for its exhibition was water, with the addition of a little simple syrup.

"In taking a retrospective view, extending over a period of four years, of the cases of secondary and tertiary syphilis treated with the iodide of potassium, and those just detailed in which the bromide was substituted, I think the former line of treatment must strongly recommend itself to every impartial mind for the following reasons:—

"First. The iodide exerts in the majority of instances an instantaneous, decided, and always a beneficial action, contrasted with the bromide, whose effects are slow, unsatisfactory, and frequently unsuccessful.

"Secondly. The iodide seems to act favourably, not only upon the disease for which it is prescribed, but also upon the constitution in general, by increasing the appetite, improving the powers of digestion, thereby enabling the patient to gain flesh while under its influence, whilst the bromide not unfrequently produces nausea, impairs the appetite, and deranges the digestive organs.

"And lastly, every form of secondary and tertiary syphilis (with the exception of iritis) is amenable to the action of the iodide, whilst that of the bromide is extremely circumscribed. A very general impression prevails among the profession, that in order to obtain favourable results from the exhibition of the iodide of potassium, it is requisite to administer it in large doses. From the experience which I have had in its employment in the Lock Hospital, I should say that far more desirable consequences are likely to ensue from moderate than excessive doses; it has seldom occurred that every wished-for indication was not fulfilled by five-grain doses, and in no instance did it appear necessary to increase it further than ten grains thrice a day.

"The vehicle most commonly selected for the exhibition of the iodide of potassium, which, by the majority of writers, is considered materially to assist its therapeutic qualities, is some preparation of sarsaparilla, usually the compound decoction. From repeated experiment, I feel convinced that the beneficial effects of the iodide are in no way assisted by these preparations, as to the utility of which, either directly or indirectly, reasonable doubts may be entertained.

Dr. Stapleton confirmed Dr. Egans' views, and stated, that in comparison with the iodide of potassium, he had found the bromide almost inert.

Dr. Geoghegan has used the bromide pretty extensively, and also was led to a nearly similar estimate of its inefficacy. In some rupial affections, however, he had found it decidedly advantageous; and in venereal rheumatism, also, it had been extremely serviceable; but in most other respects its action was probably inferior to that of the hydriodate.

16. *Substitute for the Vapour of Ether to annul sensation during operations.* By Dr. DAURIOL.—At midsummer, when vegetation is at its height, solanum nigrum, hyoscyamus niger, cicuta minor, datura stramonium, lactuca virosa, are gathered, and a sponge is plunged in their juice freshly expressed. The sponge is then dried in the sun, the process of dipping and drying is repeated two or three times, and the sponge is then laid up in a dry place.

When the sponge is required for use, it is soaked for a short time in hot water; afterwards it is placed under the nose of the person to be operated upon, who is quickly plunged into sleep, more or less deep, according to the susceptibility of his nervous system. The operation may then be proceeded with without any fear that the patient has any sensation of pain. He is readily aroused from the stupor by a rag dipped in vinegar, and placed to his nose.

M. Dauriol records five cases in which he has successfully employed this means of bringing about insensibility during operations.—*Lancet*, May 22, from *Journal de Toulouse*.

MEDICAL PATHOLOGY AND THERAPEUTICS AND PRACTICAL MEDICINE.

17. *On the Causes of Cyanosis.* By NORMAN CHEVERS, M.D. (*London Med. Gaz.*, March, 1847.)—[We invite attention to the following remarks on the causes of cyanosis, extracted from a valuable and elaborate paper by Dr. Chevers, entitled, "A Collection of Facts, Illustrative of the Morbid Conditions of the Pulmonary Artery, as bearing upon the treatment of Cardiac and Pulmonary Diseases." It will be perceived that the results of his investigations are confirmatory of the views constantly advocated in this Journal, as to the cause of cyanosis, and that the author pays a deserved compliment to the valuable paper of Dr. Moreton Stillé, published in our number for July, 1844.]

The malformations to which the heart is liable usually consist of lesions, which are not inconsistent with the prolongation of intra-uterine life,* but which are calculated to produce very serious embarrassment when respiration commences, and when the alterations naturally affected after birth in the circulatory apparatus begin to be established.

* There are some exceptions to this rule, but they do not appear to be of frequent occurrence.

The paroxysms of suffocative dyspnœa, the lividity of the surface, and all the other distressing symptoms which constitute the leading features of cyanosis, were formerly attributed solely to the admixture of venous with arterial blood through the abnormal cardiac apertures which are usually discovered in these cases; and to the consequent diffusion of a dark and vitiated fluid through every part of the arterial system; but this opinion has been in great measure abandoned since the facts have been established that the symptoms in question may be present in cases where no abnormal communication whatever exists between the cavities of the heart, as well as in instances where it is utterly impossible that the smallest quantity of venous blood could have entered the arterial system: while on the other hand, the symptoms of morbus cœruleus are not by any means necessary attendants either of patency of the cardiac septa or of permanence of the arterial duct.

The opinion at present adopted by many pathologists with regard to the cause of the symptoms of morbus cœruleus is, that they depend entirely upon delay to the passage of the blood through the lungs, resulting from the presence of a fixed impediment to the circulation.

Morgagni appears to have been the first writer who attributed the intense lividity of cyanosis to obstruction in the trunk of the pulmonary artery. Louis ascribed this symptom to some obstacle to the circulation of the blood through the veins; and M.M. Bertin and Berard coincide in believing that the blue appearance of the surface in those affected with abnormal apertures in the cardiac septa depends on the stasis of the blood in the right cavities of the heart, and upon the consequent difficulty with which the venous blood circulates; and, though it be complicated almost always with the mixture of the two kinds of blood, still it is not produced by this mixture. The opinion that cyanosis is exclusively due to the circulation of venous blood through the arterial system, has been satisfactorily disproved by Dr. Stillé,* who adduces ample evidence in proof of the conclusions, (1) that cyanosis may exist without admixture of the blood; (2) that there is not always a proportion between cyanosis and the degree in which the blood is mixed; (3) that complete admixture of the blood may take place without cyanosis; and (4) that cyanosis depends upon congestion of the general venous system from obstruction in the right side of the heart or in the pulmonary artery, impeding the return of its blood to the lungs.†

The results of my own investigations are almost entirely confirmatory of Dr. Stillé's inferences. Cases of cyanosis will very rarely occur in which the morbid anatomist will fail to discover some organic cause which acts virtually as an impediment to the pulmonary circulation. Dr. Stillé has, perhaps, referred somewhat too exclusively to the right side of the heart and the pulmonary artery as the seats of the mechanical obstacle to the circulation in these cases, for it will occasionally, though rarely, be found that the physical impediment to the circulation exists in the pulmonary tissue, or is even external to the lungs, as in Dr. Marcei's well-known case;‡ and, in some few instances, the cause of obstruction is situated either in the left heart or in the aorta. Still, in every case of cyanosis, there will be found to exist some cause or other which tends essentially to prevent the free and complete circulation of the blood through the lungs, to retard its passage through the venous system, and, consequently, to render the process of its arterialization slow and incomplete §

* In a valuable paper on Cyanosis, in the American Journal of the Med. Sciences, vol. viii. p. 25: 1844.

† In 54 out of 62 cases of cyanosis analyzed by Dr. Stillé, the pulmonary artery was either contracted, obstructed, or impervious. In the remaining 8, the conditions presented by this vessel were fully capable of producing great venous congestion.

‡ Edinburgh Med. and Surg. Journal, vol. i. p. 412.

§ As a general rule, the heart's action is greatly accelerated in cases of cyanosis depending upon contraction of the pulmonary orifice, and upon various other kinds of cardiac malformation: an arrangement by which the smallness of the quantity of blood which passes through the lungs, and becomes oxygenized there, is, in some measure, compensated by the rapidity of its transit. Still, in the majority of cases, this adaptation is not sufficiently complete, either to prevent great delay to the circulation through the right cavities of the heart, or to produce the oxygenization of the entire volume of the circulating fluid so rapidly or so effectually as is usual.

Dr. Stillé has also argued that obstruction to the pulmonary artery is never found without the concurrence of cyanosis. This is perfectly true as regards most of the cases of congenital narrowing of this vessel, but it does not hold good in all; for instance, where congenital imperfection of the pulmonary valves does not become seriously obstructive until late in life, the symptoms which it produces are not necessarily those of cyanosis;* and I shall hereafter have to cite an instance in which extreme narrowing of the pulmonary orifice, the result of endocarditis occurring at the adult period, was not attended with the slightest appearance of lividity of the surface: in fact, it appears that, for the complete establishment of that generally dilated condition of the entire venous system which attends cyanosis, the obstruction to the circulation must have been present either at or before birth, when the capillary vessels are naturally more capacious than they are in the adult, or it must become confirmed previously to the full development of the body, while the entire vascular system is pliant and dilatable, and is still capable of readily adapting itself to permanent changes in the circulation.

It is, of course, well known that various kinds of obstructive disease of the heart and lungs, occurring in adult life, are liable to produce extreme internal venous congestion and considerable lividity of the surface; but I am not acquainted with any instance in which an impediment of this kind, coming into operation subsequently to the age of twenty-five years, has produced that general and intense blueness of the entire surface which forms the characteristic feature of true cyanosis depending upon congenital malformation of the heart.

In extreme cases of original defect of the cardiac apparatus, such as those in which the ascending pulmonary trunk is obliterated or absent, the cyanosis appears to be due less to the circuitousness of the course by which the lungs are supplied with blood, than to the unnatural narrowness of the pulmonary vessels,† which are almost invariably far less capacious than in the ordinary condition; hence the pulmonary veins and left auricle are usually more or less contracted in these cases, while the lungs are either badly developed and imperfectly expanded, or present the evidences of chronic impediment in the dilated condition of their tubes.

There are still a few pathologists who adhere to the old opinion that cyanosis mainly depends upon the circulation of carbonized blood through the arterial system, insisting upon the fact that, in the great majority of cases of morbus cæruleus, the septa of the heart are more or less deficient. As I have already stated, it is now established that cyanosis may exist quite independently of imperfection of the cardiac partitions, or of admixture of the venous and arterial blood; still, I apprehend that M. Berard and Dr. Stillé have argued somewhat too exclusively in maintaining that admixture of the two currents has no influence whatever in producing cyanosis, as it appears by no means unreasonable to conclude that, in extreme cases of this kind, where the impediment to the pulmonary circulation is great, and where a large quantity of venous blood evidently passes into the aorta at every systole of the ventricles, the discoloration of the surface, and especially the lividity of the mucous membranes, which is so frequently observed in these cases, is, in part, at least, due to the dark hue and impure condition of the arterial blood. Admitting this, it must be borne in mind that the principal reason why cyanosis is generally present in cases of extensive communication between the cavities of the heart, will be found in the fact that a cause of obstruction which is capable of preventing the natural closure of the septa will rarely fail to occasion

* In the cases of a man, ætat. 44, related by Dr. Craigie, and of a woman, ætat. 63, detailed by Dr. Fallot (cited at pp. 749-50 of this paper), the pulmonary valves were found united into a thickened ring: in the one case, capable of admitting the end of the little finger; and in the other, merely allowing the passage of a goosequill. There were evidences of very considerable impediment to the circulation in both of these cases, but there does not appear to have been any cyanosis in either.

† Some of the cases in which the heart has been found situated below the diaphragm, prove that, where its canal is free, great deviation in the course of the pulmonary artery is not a necessary cause of dangerous impediment to the circulation, and is not the main cause of dyspnoea and cyanosis in extreme cases of malformation.

permanent and severe impediment to the circulation. Where an abnormal opening is discovered in the cardiac apparatus of one who has only lately become cyanosed, or where such an aperture presents traces of recent enlargement, it must not be at once concluded that the presence or augmentation of this communication has occasioned the cyanosis; but the first cause of the disease must be sought for, and this will generally be discovered in the form of some manifest impediment to the circulation which has determined the patency of the opening from birth, and which, having become recently aggravated, has produced the cyanosis at the same time that it has increased the size of the abnormal foramen.

Dr. Meigs adheres to the doctrine that persistence of the foramen ovale is the cause of cyanosis in infants. He observes, that, "as the occlusion of the foramen ovale is prevented by the torrent of blood flowing from the inferior vena cava, raising and keeping raised the interauricular valve, which is thin and floating, it occurred to him to place the cyanosed child on the *right* side, with the head and trunk somewhat raised, so that the interauricular septum should be maintained horizontal, and the blood contained in the left auricle should press with its whole weight on the closed valve. He has frequently seen the blue colour disappear at the very instant the infant was placed in this position, proving that the oxygenated blood only entered the arteries." Dr. Meigs adds, that he has thus saved the lives of fifty or sixty children in a hundred; whereas, as is well known, all the other means hitherto tried have failed.*

Successful as this application of Dr. Meigs' theory has evidently proved, it is certain that his explanation of the fact is by no means demonstrative. So far from patency of the foramen ovale being an essential concomitant of the blue disease, it is well known that, in a very considerable proportion of instances of cyanosis, the auricular septum is perfectly closed; and two cases are upon record† in which cyanosis was distinctly attributable to closure *ante partum* of the foramen of Botal. Wherever this communication remains too long open in a child, there must exist some cause, either of obstruction to the circulation, or of over-distension of the heart, to prevent its closure; and it is to that cause, and not simply to the patency of the auricular septum, that the cyanosis is due; otherwise it is clear that every infant would remain cyanosed until the termination of the usual period at which the foramen becomes naturally closed, and every individual whose auricular septum remained imperfect would be the subject of morbus cœruleus,—neither of which circumstances is found to obtain. The position of the body recommended by Dr. Meigs is, however, well calculated to relieve those paroxysms from which the subjects of congenital heart disease suffer, as it places nearly the whole of the voluntary muscles in a state of relaxation, thereby rendering the circulation through the extreme vessels as free as possible, and (what is of still more importance) as it facilitates the supply of arterial blood to the lungs and to the brain.

Much unnecessary discussion has been expended upon the question, whether, in cases of septal deficiency, admixture of the venous with the arterial blood occurs constantly, or only as the result of occasional causes of impediment to the pulmonary or systemic circulation. In by far the larger proportion of instances of extensive congenital malformation of the heart, and certainly in all those cases where direct communication between the cavities or arteries exists as the result of a permanently obstructed state of any of the cardiac orifices or vessels, admixture of the two currents of blood is a matter of necessary occurrence—the sole means by which the circulation is maintained at all; and here the state of the parts shows at a glance in which direction the diverted current has been accustomed to pass. *Thus, in cases of transposition of the aorta and pulmonary artery, where the ventricular septum and foramen ovale remain pervious, it is evident that blood must be continually passing directly from the right to the left ventricle, and from the left to the right auricle. In other instances, where the orifice of the pulmonary artery is closed, and the aorta arises from the right ventricle, it is apparent that the contents of the left cavities can only reach the aorta by passing from left to right through the aperture in the septum, which is always provided

* Report of the Academy of Sciences, Paris, June 2d, 1815, and Dublin Med. Press, vol. xiv. p. 18.

† Cases by Vieussens and Mr. Ebenezer Smith, p. 967.

in these cases. So, also, in the majority of instances where the foramen ovale remains open, but protected by an efficient valve, it is clear that blood has traversed the aperture only from right to left. But in many cases of congenital malformation of the left cavities of the heart, it is evident that the current through the foramen has always been from left to right. In cases of patency of the ductus arteriosus, associated with contraction of the pulmonary orifice, the lungs, of course, receive some portion of their supply of blood through the duct from the aorta; but, where there exists a contracted or obliterated state of the aorta below the origin of the left subclavian, it not unfrequently happens that a considerable stream of blood is regularly conveyed by the duct from the pulmonary artery into the aorta. In the larger proportion of these cases it is impossible that the direction of the current should be permanently reversed; the foramen ovale is generally defended on one side by a more or less efficient valvular apparatus, and an analogous arrangement has occasionally been developed in patency of the ventricular septum and arterial duct.*

It has been argued by M. Cloquet and Dr. Willis, that when the right and left cavities of the heart are of equal and proportionate strength, no admixture of the arterial and venous blood will occur during their contractions, even although there may exist free communication between the vessels, or through the septa. A few cases have been observed which go far to substantiate the general correctness of this doctrine; but the instances of extensive malformation of the heart are so few in which the two sets of cavities are exactly proportioned to each other, or in which the whole of the cardiac outlets are perfectly free from obstruction, that the rule is by no means one that admits of being either extensively or frequently applied.

It is now allowed by the majority of pathologists that, in itself, patency of the foramen ovale (where the opening, although free, is guarded by an efficient valve), is by no means necessarily attended with cyanosis; and it is probable that, where this exists as the principal defect in the cardiac apparatus, the passage of blood through the aperture is ordinarily by no means large, and that the transit of a full stream from one auricle to the other may be merely an occasional occurrence for the purpose of relieving distension under circumstances of accidental engorgement or obstruction. Still, it is doubtful whether we can fully admit the opinion of Bichat and Louis, that, "in examples of septal deficiency, or at least in cases of open foramen ovale, no admixture of venous with arterial blood occurs except under circumstances of obstruction;" for, as we have already seen, these deficiencies are seldom, if ever, present where there is not also discoverable some cause of permanent impediment to the circulation, which probably at all times occasions a certain degree of comminglement of the currents, although that mixture may not be sufficient to produce serious vitiation of the arterial blood. It is generally found that, when the subjects of the minor degrees of septal deficiency become affected either with pulmonary disease, or with any causes of delay to the systemic circulation, the dyspnœa and lividity of the countenance are greater, and the consummation of the fatal issue is usually more rapid than might have been expected from the extent of the recent pulmonary disease, or from the severity of the other superadded causes of obstruction, had these existed alone—facts which go far to corroborate the belief, that in cases of permanence of the septal openings there generally exists some fixed impediment to the circulation, although that impediment may not be sufficient to produce any visible ill consequences while the heart is tranquil, and the lungs remain free from congestion or other superadded lesion.

It is a demonstrable fact, that there may constantly occur considerable commixture of venous with arterial blood, and yet the individuals may be well nourished and active, and may arrive at maturity without ordinarily presenting sufficient blueness of the surface to attract the attention even of a medical man.

In other instances of this kind the patients may continue for many years to enjoy tolerable health, being only occasionally liable to more or less lividity of the surface, either with or without a certain amount of dyspnœa, occurring in consequence of extraordinary exertion, repletion, or transient causes of pulmonary ob-

* See cases observed by Richerand, p. 1087, and by the author, p. 1090.

struction. Here the intensity of the cyanosis can never be taken as an indication of the degree of abnormal communication which exists between the cavities of the heart. Louis has very justly remarked, that "the change of colour is never found to be in proportion to the freedom of the communication;"—for it is, of course, evident that, wherever obstruction of the outlets exists, the more freely the cavities communicate the less will the circulation be impeded.

In either of the above sets of cases the symptoms of morbus cœruleus may become permanently developed in their greatest intensity whenever additional and permanent obstruction occurs to the passage of the blood through the lungs, or immediately the muscular power of the heart becomes seriously impaired. Instances of considerable malformation of the heart occasionally occur in which cyanosis does not appear until the age of puberty, and others have been observed where the lividity of the surface, which had occasionally presented itself from birth, did not become permanent until a rather advanced period of life. In the former of this class of instances the increased impediment is probably due to a want of that development of the pulmonary apparatus which usually takes place at the approach of adult age; in the others it may be traced to additional narrowing or other consequences of acquired disease in the malformed structures, causes which are probably further aggravated by plethora, and by a certain amount of deterioration of the lungs.

Allusion has been already made to the influence of contraction of the foramen ovale and arterial duct in producing the first symptoms of morbus cœruleus in children who are the subjects of congenital cardiac defect; it does not usually appear that such defect necessarily interferes with the health of the infant so long as its system is freely supplied with placental blood; but, so soon as respiration and the organic changes which accompany the commencement of that process become established, the malformed heart fails to perform with facility functions for which its structure very imperfectly adapts it, and the evidences of severe obstruction are quickly developed; these are, in all probability, also aggravated by the increased bulk of the fluids, which is produced when the process of assimilation commences. The opinion advanced by M. Billard, that a perfectly oxygenated blood is not necessary to the new-born fœtus, taken in conjunction with the fact that the infant's body has usually a slightly livid appearance until the funis is secured and respiration is fully established, has been regarded as a sufficient explanation of the circumstance that several hours or days frequently elapse after birth before the symptoms of the blue disease present themselves in those children whose hearts are structurally imperfect. I am not, however, aware of any fact which proves that the blood supplied to the fœtus during intra-uterine life is less completely oxygenized than that which circulates through the arteries of the mother; and it is evident that the slight discoloration of the surface alluded to above is merely the transient result of the embarrassment and delay which the circulation necessarily sustains at the time when the infant is gasping in its first efforts to inspire.

18. *Detection of Sugar in the Expectoration of Patients affected with Diabetes.*—Dr. FRANCIS presented to the Manchester Pathological Society, Feb. 4th, 1847, a specimen of sugar which he had obtained, a few days previously, from the expectoration of a man the subject of diabetes mellitus.

The patient, aged 25, for upwards of a year suffering the ordinary symptoms of this disease, and at present much wasted in flesh, had, during the last six months, shown signs of advancing pulmonary phthisis. The expectoration latterly had amounted to little less than 24 ounces daily, and, on the day which furnished the specimen submitted to examination, had even exceeded that quantity. It was composed of an abundant white, frothy, tenacious mucus, holding in suspension little rounded masses of opaque yellow material.

In order to the detection of sugar, the expectoration was, first of all, treated freely with strong alcohol, which coagulated much of the albuminous matters. Distilled water was then added, and, after agitation and digestion for a short time, the whole was thrown upon a filter, and a clear watery fluid readily passed through.

A small portion of this fluid reduced the protoxide of copper when tested after

the manner recommended by Trommer, and another portion underwent fermentation over mercury.

The remainder was evaporated in a water-bath to dryness, the residue broken up into fragments, and digested for several hours in alcohol, which was then filtered. The alcoholic solution thus obtained was of a yellowish tint, clear, and decidedly sweet to the taste. On evaporation, it left the considerable quantity of sugar now produced to the Society, and which will be found partly crystalline, of a rich sienna brown colour, strong honey-like odour, and intensely sweet taste.

A fluidounce of the expectoration, after dilution with water, yielded by fermentation a trifle more than $2\frac{1}{2}$ cubic inches of carbonic acid, which would be equivalent to $2\frac{1}{2}$ grains of sugar, or 50 grains to the imperial pint.

The urine passed at the time of the examination contained sugar; its specific gravity was 1032, and its average standard for some days had been about 1035. The quantity passed was much less than formerly.

Dr. Francis had detailed at length the account of the process he had used, because, so far as he knew, the presence of sugar in the expectoration of diabetes had not previously been sought; at any rate, he could find no allusion to the subject in the Sydenham Society's edition of Simon's Animal Chemistry, which, with the notes of its accomplished editor, may be assumed to have brought our knowledge in such matters up to the present time.

In addition to the above case, he had, within the last two days, had the opportunity of examining the expectoration of another man who was under treatment two years ago with diabetes, and who, in addition to this, is now far advanced in phthisis. Here the expectoration was more scanty, and consisted of purulent matter, rendered tenacious by an admixture of rust-coloured secretion from a little local pneumonia. In this case an ounce of sputa contained so much as about seven grains of sugar.

It might be found, he thought, when closer attention came to be given to the subject, that there were other organs than the kidneys habitually playing an active part in the removal of the sugar which was accumulating in the blood during the progress of diabetes. There were, at least, some grounds for believing such might be the case from the results just detailed, and, if so, the quantity of sugar escaping in the urine could not be viewed as an absolutely safe index to the quantity formed in the system, unless taken in conjunction with other means of its elimination.

The cases might further be looked upon as furnishing an argument, if further evidence upon the subject were necessary, that the kidneys play no part in the formation, but merely in the separation from the blood, of the sugar.—*London Med. Gazette*, Feb., 1847.

19. *On the Pathological Anatomy of Perichondritis Laryngea.* By J. H. JANSEN.—This rare laryngeal affection has been found to follow external injury, to arise idiopathically as a catarrho-rheumatic affection, or more frequently secondarily, along with or after small-pox, typhus, the mercurial cachexia, and secondary syphilis. The author narrates two cases. One a young man, who had been already five weeks under treatment for typhus abdominalis, was seized during convalescence with a laryngeal affection, and died suffocated four days afterwards. The other, an individual aged twenty-four, affected with confluent small-pox, also died suffocated, after suffering eleven days from a similar complaint, which arose during the crusting of the pustules. The morbid appearances found were, an abscess, surrounding on all sides a considerable extent of the posterior portion of the cricoid cartilage; superficial softening and diminished size of the cartilages, along with thickening or serous infiltration in the neighbourhood of the abscess; the mucous membrane was, excepting oedema, normal without a trace of ulceration. Our author, considering that normal cartilage is incapable of inflammation, looks upon this as a true inflammation of the perichondrium, with deposition of the plastic exudation upon the surface next the cartilage; this collects under the perichondrium, separating it from the cartilage, and, passing gradually into pus, forms an abscess, whose walls are formed by the thickened and infiltrated (with serum) cellular tissue. The alterations in the cartilage are produced, 1st, in a mechanical manner; the exudation, by separating it from the perichondrium, putting it beyond

the pale of the circulation and consequent nutrition, &c.: 2d. In a chemical manner, by the action of the pus upon the necrosed cartilage; the perforation of the cartilage, and separation of it into several pieces, proceeds not, as *Albers* supposes, from a chondritis, but is a consequence of the different thickness of the cartilage at different points, and of the unequal extension of the inflammation. The extension of the abscess on the external surface of the cartilage cannot be explained by *Cruveilhier's* theory of an inflammation of the submucous cellular tissue, which is also much more readily infiltrated with pus than an abscess formed in it. The cricoid cartilage is most frequently affected; more rarely the thyroid, partially or entirely, alone or in unison with the former; and the disease has been only twice narrated as occurring in the arytenoid perichondrium. Though highly dangerous when following exhausting diseases, as an idiopathic affection or consequence of injury, the prognosis need not be so unfavourable, the swelling and œdema causing the principal danger, viz., death from suffocation, which might be obviated by a timely performance of tracheotomy.—*Monthly Journal of Med. Science*, Feb., 1847, from *Holländische Beiträge zu den Anatomischen und Physiologischen Wissenschaften*.

20. *On some Appearances in cases of so called Purulent Poisoning of the Blood.* By Dr. HERTZVELD, of Zwolle.—Organic chemistry and the microscope are daily working such reformations in the healing art, that attention is again becoming drawn to the long well known influence of the fluids of the body—more especially the blood—upon the organism, and to their influence in the production of disease. In the hey-day of solidism, and especially when the doctrines of Broussais were at their height, every disease was localized; and in order to account for the general symptoms, and the appearance of disease in distant organs, refuge was had to secondary irritation, sympathy by means of the nerves or similarity of tissue, contiguity, vicarious functions, and the like. At present, a more simple, and in many cases a more certain explanation of the general symptoms of disease, is found in an affection of the blood, and besides this, the many changes, primary or secondary, to which this fluid itself may become subject, and which were unknown to the solidists.

Among those diseased processes which, at present, it is conjectured may owe their origin to a changed state of the blood, belongs the so called purulent poisoning (eitervergiftung), or as it is named by Engel, purulent fermentation (eitergährung,) a condition of the blood in which it generally acquires a greater degree of fluidity. This condition is found, indeed, in other diseased processes; but purulent fermentation is specially characterized by the formation of large deposits of pus in various parts of the body; it may be in the parenchymatous organs or in the extremities: and this is not unfrequently accompanied with a greater or less effusion of fetid ichor. This diseased process, which may assume various forms, and to which the most opposite names have been given, such as phlebitis, absorption of pus, malignant inflammation, gangrenous erysipelas, diffuse inflammation, abscess by metastasis, &c., is further specially characterized by the circumstance that it always arises under the influence of some infecting matter, be it miasma or contagion, which obtains admission through an open wound or a mucous membrane, and which sometimes appears to be connected with a mucous or pus-like secretion. The nature of this infecting matter is still unknown; but it is probable that, like the purulent poisoning itself, it may vary. In the absence of analysis, no very minute distinction can be made of these various conditions. Meantime, however, the varying degree of severity under which the diseased processes connected with these conditions originate, and the diversity of causes which call them forth, would all seem to indicate some degree of difference in the infecting matter. Thus we see it following wounds in the corrupted air of an hospital, profuse suppurations after amputation, wounds received in dissection, and handling diseased cattle (pustula maligna, the glanders of horses), and in all these cases it is modified, not only in its course, but in its appearances. Nay, what is more, all acute exanthemata appear to originate in a somewhat analogous process; but their pathological products are developed on the skin or mucous membranes, whilst in the other case they are deposited in the parenchymatous organs, or cellular tissue. In many of these, however,—variola for example,—the contagion is connected

with a purulent-like secretion, which, by re-absorption, produces the same disease in other organisms. The analogy might be pushed further, and a chronic dyscrasia, as for instance, syphilis, might be placed under the same category, by assuming that in the former an acute, and in the latter a chronic, deposition of the poison from the blood takes place; and thus we obtain a connection between diseased processes, which, in their form, course and consequences, are very different, as between erysipelas and typhus, metritis septica, and ulcus phagedænicum; a connection which only shows the more strongly how manifold are the diseased changes to which the blood is subject. These diseased processes may all be reduced to two principal heads; 1st, a diseased state of the blending of the elements of the blood, which originates from the peculiar constitution of the body, and only under the direct influence of external forces, as in the scorbutic, chlorotic, carcinomatous, tuberculous, and scrofulous diatheses, &c. (dyscrasia); 2d, such as are called forth under the influence of contagion, to which the above named processes of purulent poisoning belong (poisoning of the blood).

It is well known that it has long been a subject of dispute, as to how, in cases of purulent poisoning, the poison is taken up into the blood. The doctrine of phlebitis, as set forth by Dance and Cruveilhier, is a step in the direction of the new hæmato-pathology, from the old theories of inflammation. Experience has abundantly proved that this doctrine is quite untenable, and that true cases of purulent poisoning may occur without a trace of inflammation in the veins. This has been proved beyond doubt, by Kennedy, who, among others, gives two cases by Duncan, in which diffuse inflammation followed bleeding at the arm, and in which, on dissection, the veins were found perfectly healthy. The author himself met with a case in 1840, under the care of Professor Tilanus, in which, in like manner, no trace of inflammation was found in the veins after death.

The case was the following—"A man aged forty, received a small wound on the left elbow joint. On his admission into hospital, the left arm was found greatly swollen, hot, with diffused redness, and the epidermis raised into a blister; there was also headache, foul tongue, small pulse, low state of temperature of the skin, disturbed vision, subsultus tendinum, evident disturbance of the cerebral functions, delirium and coma, alternating with consciousness. Next day gangrenous vesicles, yielding a fetid odour, were found on the arm. The gangrene soon spread, and adynamic symptoms set in, such as sunk visage, cold skin, dry tongue and lips, diarrhœa, muttering delirium, &c. The spreading of the gangrene appeared, at one time, as if about to stop, but his hope soon vanished, and the patient sank on the fourteenth day.

"On dissection, the arachnoid was found covered with fibrinous exudation; the brain, lungs, and intestines were healthy. The cellular tissue under the dead skin was found in a state of suppuration, with necrosis of the aponeuroses; the deeper cellular tissue, with the vessels and nerves, were matted together into a firm mass. The brachial artery and vein were dissected out of it, and on being laid open, their internal coats were found perfectly healthy."

But it may be affirmed that there is positive proof, by experiments on animals, to show that purulent poisoning of the blood may originate from suppurating phlebitis. This the author does not deny, but he believes that in such cases, a destructive or putrefactive process (the name is of no consequence, seeing we are ignorant of its essential nature), arises from the mixture of the pus and blood, by which a deleterious matter is formed, that exercises a poisonous influence over the whole mass of the blood. The author then comes to the views entertained by others regarding purulent poisoning. The destructive action does not arise from the mechanical admixture of the pus or its elements with the blood, but in the development of a substance hitherto unknown, and which has its origin in the degeneration of the pus itself. The strongest objections against purulent poisoning are; 1st. The pus cells are too large to pass through the pores of the vessels; 2d. The disappearance of large abscesses without any prejudicial effect on the organism.

It is, indeed, almost incredible that acute physiologists should ever have entertained in sober seriousness the crude views stated in the first objection. Must not every solid substance, ere it is fitted for absorption, be reduced to the fluid.

state? And do we not see the same appearances under other pathological circumstances? When new articular surfaces are formed in old luxations, are the bony cells, as such, taken up into the vascular system? or, when a necrosed portion of bone is separated from the sound one? The other view, as stated in the second objection, is a confirmation of our author's views in regard to purulent poisoning; for what occurs in the disappearance of such an abscess? As Vogel has justly stated in his pathological anatomy, it is the serum of the pus which suddenly disappears; the pus corpuscles, on the other hand, may be found in an unchanged state for a long period. It is only after a considerable time that they disappear by absorption, *and only after they have been reduced to the fluid state.*

The same thing takes place in purulent poisoning, but with this difference, that in the first case, the serum abstracted from the influence of the air, retains its natural properties; whereas, in the other, in consequence of the effect of the air, or some other miasma, a substance is generated, by some species of chemical process, which acts prejudicially on the whole mass of the blood. Far from ascribing this to the solid parts of the pus, he believes it to originate from the ichor, the remarkable fluidity of which sufficiently distinguishes it from laudable pus; just as in the same way the poisonous properties of small-pox matter reside, more evidently in the lymph than in the pus of the pustule.

When a mixture of pus and blood takes place in the vessels, either in consequence of a wound, or phlebitis suppuratoria, the pus cells act merely as a mechanical hinderance, and produce stagnation in the circulation of the blood; a stagnation, certainly, which, were it carried to any great extent, would produce death as suddenly as the entrance of air into the veins, or the injection of oil, as in the well-known experiments of Magendie; but those appearances, to which the name of purulent poisoning has been given, can only take place after the pus has previously undergone some change in its properties by means of a chemical process.

According to our author, therefore, Engel is entirely wrong in assuming that in order to produce purulent poisoning, contact of the pus with the blood is a necessary condition; and he is also wrong in ascribing to the pus cells a solvent power on the blood. Indeed, the very proofs which he brings forward in favour of those diseased processes, ranged by him in the category of purulent fermentation, testify against him; and the objections stated by him to the opposite views are easily overcome. 1st. "*All croupy exudations (the name given by Rokitansky to membranous exudation, the result of inflammation), says Engel, undergo the process of cure by the pus-like solution of the coagulable lymph, and its effect on the blood is prevented in consequence of its being separated from it by the medium of an uninjured skin.*" To this our author replies, the effect on the blood is prevented merely because the exudation being abstracted from the influence of the air, is not subject to any disturbing chemical processes. And the proof of this, he states, is to be found in the operation of empyema, the unsuccessful result of which arises from the admission of air, and its action on the exudation, which cannot be prevented. 2d. "*Inflammation of the lymphatic vessels, accompanied with purulent exudation, seldom exercises any prejudicial effect upon the blood, and for the reason, that the pus being isolated in the lymphatic system, no actual contact can take place.*" As already stated, our author conceives there are several varieties of blood poisoning, and that these differ materially in their appearances, course, and results. Syphilis may be placed in this category; for here a dyscrasia of the blood is produced by the inoculation of a contagion grafted on the pus. Is there any isolation of the pus in the lymphatic system in this case? Is it not the case, on the contrary, that a syphilitic bubo always precedes the constitutional affection? 3d. "*Chronic abscesses, which from impenetrability of the skin, or other causes, are shut up as in a sac, exercise no prejudicial influence on the blood.*" Of course, because the air has no means of penetrating to the pus, so long as they remain unopened; and hence the great caution exercised in opening chronic abscesses. 4th. "*Phlebitis, or umbilical arteritis, in new-born children, produces no change in the blood, and yet pus is formed both in the arteries and veins; there is nothing, moreover, in the locality to prevent its being taken into the mass of the blood.*" The fact is correct; but why is the pus not taken up? Because coagulation of the blood is produced by the solid parts of the pus, and hence a complete separation from the rest of the vascular system.

The same thing occurs in true phlebitis. But all this, according to our author, is just a proof that the effect of the blood corpuscles is to cause stagnation. Were the pus cells themselves the cause of purulent poisoning, a diseased process allowed by Engel himself, to produce great fluidity of the blood, how could any line of demarkation take place, or how can we explain the origin of the stagnation?

Besides all this, there are many diseased processes, justly placed by Engel under the category of purulent putrefaction, in which there is no proof that an actual contact between the pus and blood actually takes place, but, on the contrary, there are many probabilities against it. Among other examples, the author adduces that of glanders in the human subject, in all the cases of which hitherto detailed, the symptoms of purulent putrefaction were present, on which account, Engel, true to his system, holds the communication of it from animals to men as exceedingly doubtful. But this has been completely proved by the most careful observation, and as no direct mixture of the pus and blood can in this case be admitted, it hence follows that the infecting principle in purulent poisoning does certainly not reside in the pus cells. The same thing holds good in the puerperal processes, diffuse inflammation of the cellular tissue, &c., in all of which cases not only is there no direct proof of the admixture of the pus and blood, but, on the contrary, it is in most cases highly improbable. From all that precedes, the author conceives himself entitled to draw the following conclusions:—

- I. Every case of purulent poisoning is not produced by phlebitis.
- II. Purulent poisoning arises from a product acting prejudicially on the blood, and which product is the result of a chemical process in the pus.
- III. This deleterious product is grafted not on the pus cells, but in the pus serum.
- IV. In order to produce purulent poisoning direct admixture of the pus and blood is not essential.

V. When, in consequence of phlebitis, a mixture of the blood and pus occurs, there ensue, as a result of the mechanical properties of the pus corpuscles, stagnation of the circulation, and coagulation of the blood; the true purulent poisoning only arises when the pus has undergone the chemical changes above alluded to.—*Monthly Journal of Med. Sciences*, from *Van Deens Archiv.*, I. 5.

21. *Phlegmasia Dolens in a Male*.—M. BLANDIN, in the *Journal de Médecine et Chirurgie* for November last, relates a case of spontaneous phlebitis occurring in a labourer, exactly resembling the *Phlegmasia alba dolens* of pregnant females. The patient was admitted into the Hotel Dieu, complaining of pain and weakness in the right leg. He stated that, after more than usually severe work, he experienced an extraordinary sensation in the right leg. The veins were swollen, and he had difficulty in moving the limb. The application of cupping-glasses had produced no relief. Before admission he had suffered severe pain throughout the limb, and for some days previously the whole extremity had been much swollen, the swelling having commenced in the calf of the leg, and extended gradually upwards. The lower part of the abdomen as well was now œdematous, and tender on pressure, without any redness of the integuments. Leeches and cataplasms were applied, the horizontal posture was maintained, and mild purgatives administered. Afterwards mercurial frictions were made use of. The patient made a speedy recovery.

M. Blandin remarks, that cases of spontaneous phlebitis never present the severity or acuteness of the same disease proceeding from traumatic lesions, the former generally terminating in adhesion, while in traumatic phlebitis the formation of false membranes does not occur, but suppuration takes place, the purulent matter being absorbed and circulated through the vascular system, and producing purulent infection.

22. *On the Local Treatment of Amenorrhœa*. By A. LEGRAND.—The author commences this short memoir with a deserved compliment to the practitioner, whoever he was, who first thought of the application of nitrate of silver in the treatment of affections of the mucous membranes, characterized by a diminution of their vitality, a relaxation of their texture, an increase and vitiation of their secretion; for, he

says, this idea has been the happy foundation of many safe uses and unexpected benefits of this remedy. He refers in particular to its unexampled success in virulent ophthalmia, whether sporadic or epidemic, and in urethral discharges, and remarking on the varieties in the strength of the applications employed by different authorities, he condemns the excessive quantities recommended by some, as a practice eminently disturbing. Noticing the easy transition from the use of nitrate of silver in the urethra to the use of it in the vagina, he remarks on the anatomical causes of the less efficacy of the form of solution in the latter case, as having led first to the direct cauterization of the canal, either general or partial, by the aid of the speculum, with the nitrate in the solid state; secondly, to the use of rolls of lint, bougies, and the like, smeared with an ointment of nitrate of silver.

To the use of the nitrate in the solid state he objects, on the ground of its severity and other inconveniences, and rejecting the supposed advantage of the tampon for keeping apart the inflamed opposite surfaces of the canal, he objects to it, besides, as a foreign body, the presence of which must irritate. Our author's method in opposition to these, is the simple application of an ointment of the nitrate, which may penetrate between the rugæ of the canal. This ointment is composed of one part of nitrate of silver, dissolved in twenty-five parts of water, and then thoroughly mixed with seventy-five parts of cerate. From two to three grammes (from thirty to forty-five grains) of this cerate are put into a muslin-bag, open enough in texture to permit the cerate to pass through under a slight pressure. The fore-finger is inserted into this bag up to the first phalanx, the bag being fastened around it, and the finger so armed is introduced into the vagina, and is carried over its whole extent, so that every sinuosity of the canal and of the vulva may be freely anointed with the contents of the bag. Our author occasionally employs the ointment of somewhat greater strength. He finds it of the greatest service in various affections of the vagina of an inflammatory character, accompanied with discharges, care being first taken to remove as far as possible those determinate causes with which the affection may be connected. Other remedies may be applied to the vagina by the same method—thus, Dr. Legrand has used successfully by this method an ointment containing tannin in relaxation of the vagina.—*Monlh. Jour. Med. Sci.*, Feb. 1847, from *Gazette Médicale de Paris*, January 2d, 1847.

23. *Chenopodium in Amenorrhœa*.—Mr. HOUTON states that he has had frequent opportunities of watching the medicinal action of the *Chenopodium olidum*, and is perfectly convinced that it is a very safe and important remedy, in many cases in which the catamenial function is not duly performed. He employs the spontaneously evaporated extract in the form of pills, from five to ten grains, night and morning. In general, if the pills are taken regularly for a fortnight previously to the expected return, the beneficial effect of the medicine is manifested; should this not be the case, he repeats them in the same manner,—that is, for a fortnight previously to the expected change. He does not advise this medicine to be given in all cases in which the catamenial flux is suspended, for there are many cases in which attention to the general health will effect a cure, which it would be superfluous to detail. It is in those cases in which the uterus itself requires medicinal aid that the peculiar benefit of the chenopodium is shown.—*Medical Times*.

24. *Alum in Pertussis*.—Dr. DAVIES highly extols the efficacy of alum in pertussis. In the late edition of Underwood's Treatise, edited by him, he says, "After a long trial, I am disposed to attach more importance to alum, as a remedy in whooping cough, than to any other form of tonic or antispasmodic. I have often been surprised at the speed with which it arrests the severe spasmodic fits of coughing; it seems equally applicable to all ages, and almost to all conditions of the patient. I was formerly in the habit of taking much pains to select a certain period of the illness for its administration, and of waiting until the cough had existed at least three weeks, taking care that the bowels were open, the patient free from fever, the air passages perfectly moist, and the disorder free from complication of any kind. A continued observation of the remedy, however, has induced me to be less cautious, and I am disposed to think, that a very large amount of collateral annoyances will subside under its use. The fittest state for its administration will be a moist condition of the air-passages, and freedom from cerebral

congestion; but an opposite condition would not preclude its use, should this state not have yielded to other remedies. It generally keeps the bowels in proper order, no aperient being required during its use. The dose for an infant is two grains three times daily; and to older children, four, five, and up to ten or twelve grains may be given, mixed with *Syrupus Rhaados* and water. It is seldom disliked."

25. *Bismuth in Diarrhœa*.—RATER uses the tris-nitrate of bismuth in the diarrhœa of phthisical patients, and in that which occurs in typhus, with great success. It is also much employed in the diarrhœa of infancy.—*Gazette des Hôpitaux*, September, 1845.

26. *On Tubercular Pericarditis with Pathological and Practical Remarks*. By GEORGE BURROWS, M. D.—In this interesting paper, read before the Royal Medical and Chirurgical Society, Feb. 23d, 1847, the author, after alluding to the rapid advances made in our knowledge of the diseases of the heart during the past twenty years, refers to the paper of Dr. Taylor, on the Causes of Pericarditis, published in the twenty-eighth volume of the Society's *Transactions*, where that physician assigns rheumatism, granular disease of the kidneys, and extension of inflammation from contiguous parts, as the chief causes of pericarditis. To this opinion the author assents, but invites the attention of the Society to another form of that disease, which he designates tubercular pericarditis. After taking a review of the statements of different pathologists who have described tubercular deposits in the pericardium, more especially of the descriptions of Baillie, Laennec, Andral, Louis, and Rokitsansky, and of the opinion expressed by the latter, that tubercular diseases of the pericardium are the consequence, and not the cause, of chronic inflammation of that membrane, the author proceeds to detail three cases of tubercular pericarditis.

CASE I. A young Italian was admitted into St. Bartholomew's Hospital, labouring under the symptoms of incipient phthisis. After three weeks' residence in the hospital, the appearance of blood in the sputa caused a careful examination of the chest by the stethoscope to be made, when the physical signs of unsuspected pericarditis were detected. The friction-sounds of pericarditis were heard through fifteen consecutive days, and then subsided, leaving no cardiac murmur. At the expiration of two months, a fresh accession of fever, and examination by auscultation indicated the presence of double pleurisy, which continued during nineteen days, when the man died. The post-mortem examination revealed the existence of abundance of effused lymph in the pericardium, of copious serous and fibrinous exudations in either pleura as well as in the peritoneum. Numerous opaque, yellowish tubercles were found disseminated throughout the self-coagulable lymph effused on these membranes. The lungs also contained numerous tubercles in the crude state scattered throughout the different lobes; the bronchial glands and spleen also contained tubercles.

CASE II.—A young man in Millbank Prison, when convalescent from chronic dysentery, was attacked with the symptoms of incipient phthisis, but auscultation detected no signs of extensive tubercular disease. The young man sunk, and upon examination after death, both lungs were found thickly studded with yellow tubercles, varying in size from a millet-seed to a small pea. The pericardium contained a large quantity of firm lymph, intensely stained with blood; and upon separating the layers of lymph towards the base of the heart, several small yellow tubercles were distinctly recognized in those portions which were most carefully examined. A coloured drawing of this heart was exhibited to the Society.

CASE III.—A young man, who had been imprisoned at the Hulks and at Millbank, became the subject of dysentery in the latter prison, from which he was convalescent, when he exhibited the symptoms of phthisis. Upon auscultation, Dr. Baly detected the presence of pericarditis, and he was forthwith removed to St. Bartholomew's Hospital. The physical signs of pericarditis were manifest during twenty consecutive days, and then disappeared, leaving the heart exempt from all murmurs. This young man quitted the hospital, convalescent, a few days after the cessation of the pericarditis; and although his recovery prevented the verification of the diagnosis of pericarditis, still the history of the case, so closely

analogous to that of Case 2, and the absence of the usual causes of pericarditis, induced the author to regard Case 3 as one of tubercular disease of that membrane. The author then points out the class of cases in which this rare affection may be suspected—viz., in those persons, who having been long exposed to the most powerful exciting causes of tubercular cachexia, exhibit symptoms of incipient phthisis; and yet the auscultatory signs of tubercles in the lungs are inconclusive. In such persons, tubercular affections of serous membranes and of the pericardium should be looked for. The author then considers the pathological question, whether the tubercles are to be regarded as the cause or the effect of these chronic inflammations of the pericardium. After quoting the opinions of Laennec, and Rokitsansky, who appear to regard the tubercles as the result of a change taking place in the layers of fibrin, consequent upon acute inflammation, and which tubercles then cause the inflammation to become chronic, the author endeavours to show that it is more in accordance with our present knowledge of the history of tubercle, to suppose the tubercles to be deposited on the pericardium in the first instance; and that these foreign bodies acting as exciting causes of inflammation there as elsewhere, keep up chronic inflammation. A similar train of phenomena may be observed in chronic tubercular peritonitis. The author concludes by pointing out how inapplicable the usual remedies for pericarditis are in the tubercular variety. Large losses of blood, and the lavish use of mercury, should be abstained from; while counter-irritation over the chest, saline diuretics with combinations of iodine, and the speedy removal of the patient from the influence of depressing causes, are the means most likely to arrest the progress of chronic pericarditis produced by the irritation of tubercular deposits.—*Lond. Med. Gaz.*, March, 1847.

27. *Cutaneous Eruptions induced by various Medicinal substances.*—*Opium.*—The eruptions which in certain individuals follow the use of the preparations of opium are always of an exanthematous nature. In general they consist of red isolated patches not unlike those of measles. This kind of eruption is rare.

The *Solanæ*.—The eruption induced by the ingestion of the preparations of this tribe of plants are also of the order exanthemata, and are as uncommon as those which are the effect of opium. The patches are larger and irregular, resembling scarlatina.

The *Olco-resins*.—all the Medicinal substances of this class are liable to be followed by cutaneous eruptions, but none so frequently as turpentine and copaiba. The eruption very much resembles that produced by opium and belladonna, being sometimes measly, at other times scarlatinous in its appearance. It is a rare exception to see either vesicles, pustules, or papules.

Cod-liver oil.—This medicine sometimes gives rise to a form of eczema, which appears generally about the fifth day from the commencement of its use; it is, however, rarely observed.

Iodide of potassium.—The eruptions which follow the use of this medicine are far from uniform, sometimes being eczematous, at others pustular, as in acne. It sometimes happens that the skin escapes the action of the medicine, and that the mucous membranes are attacked instead; in such cases we observe coryza and conjunctivitis, which cease as soon as its use is suspended, but which will not yield to topical treatment as long as the medicine is persisted in.

The discrimination of the cutaneous affections which are induced by different medicinal substances taken internally, is of no slight practical importance; we have seen ignorance of these characters and causes give rise to very unpleasant mistakes.—*Annuaire de Thérapeutique*, 1847.

28. *Effects of sudden changes of Temperature.*—"It is not unusual," says Von LIT-TROW, (*Miscellaneous Writings*, Edited by his son: Stuttgart, 1846,) "for sitting rooms [in Russia] to be heated to 30° Reaumur (99° Fahrenheit), whilst the temperature out of doors is as many degrees below Zero. Now, as the inmates of such rooms must leave them more or less every day, and expose themselves to the open air, they must undergo a sudden change of temperature of fully 60° (135° Fahrenheit), which not even a Russian constitution could endure, unless peculiar precautions were taken. The middle-aged foreigner who settles in these regions, and chooses to adhere to the customs of his own warmer country, gene-

rally succumbs quickly to the severity of the climate. In Perm, for instance, a town that is south of the latitude of St. Petersburg, I was told by a young German, who had been settled there for six years, that not one of his countrymen, whom he had found there on his arrival, still survived. 'Within these six years,' he said, 'I have followed more than twenty German fathers of families to the grave, and I should probably myself have had a like fate, if I had not arrived here in my twenty-third year, at an age when the constitution is sufficiently plastic to accommodate itself to new outward circumstances. The Russians,' he added, 'know this very well, and they look on every foreigner who comes among them in his fortieth year, as certainly destined to die soon. Thus, the parents all die prematurely, but their children in general thrive very well.' The frequent and sudden exchange of a hot room for the cold outer air produces a malady peculiar to those northern regions, and which is the more appalling since it must be remedied on the instant, otherwise it will be rapidly fatal, or will end in a very distressing chronic malady. The strongest and healthiest man, if he puts one foot out of the room, or if the door or window is opened for a moment, is often seized with an uneasy sensation, which is immediately followed by an extreme disturbance of his whole system, the consequence of the sudden suppression of perspiration. A great weariness in the limbs, a feeling in the extremities as if they would drop off, piercing headache, and a burning in the eyes, are the first symptoms of the disorder, and if they are not immediately remedied, the case is soon beyond curing. The grand requisite is to restore the suppressed perspiration. To this end the invalid is put into bed without delay, with his clothes on, heaps of blankets and furs are laid over him, and he is made to drink as much very hot tea as he can swallow. The patient has no sooner gulped this down, and drawn in his head under the clothes, than a copious perspiration breaks out over his whole body, and all the alarming symptoms vanish as rapidly as they first appeared. The rest of the company, who have meanwhile seated themselves again round the table, are not at all surprised to find the sick man sticking his head out from under his mountain of furs in the next quarter of an hour, and chatting with them as gaily as if nothing had happened; whereas to any one not familiar with such cases, he would have seemed a few minutes before but a lost man. The coverings are gradually taken off, and the patient is often quite well again the same evening, and as hearty as ever.

"But the case is very different with those who are not thus relieved on the instant. If they are not dead by the next day, which most commonly happens, they remained crippled in every joint, and die a painful, lingering death. These people may at once be recognised, not only by their crippled limbs, but by a peculiar cachectic expression of countenance. Their answer, when asked what is the matter with them, is—*Prosdudilsa*, 'I have had a chill,' a word that smites with as awful a sound on the Russian ear as ever *δαταρε* did on that of a Greek or old.

"Whoever is not capable of being instantly thrown into a copious perspiration by a few cups of hot drink, will, if he takes my advice, keep away from those regions. But how is it that there are no such unfortunate persons among the Russians? I never met with any. Just as many persons can fall asleep whenever they like, so all Russians can perspire at will. Give them a cup of tea, a warm cloak, and a thick cap, and the thing is done. They may thank themselves for this precious peculiarity, for such it really is. Their frequent use of hot baths keeps the pores of their skin open, and their copious draughts of warm tea increase the excreting power of the skin, and adapt it to resist the influences of their climate,—influences which, but for these counteracting causes, would perhaps be more pernicious to the population of Russia than even the plague is to the people of the East."—*Westminster and Foreign Review*.

29. On *Cynanche Laryngea*, or *Acute Edematous Inflammation of the Larynx*. By Geo. Budd, M. D.—The chief object of the author of this paper, read before the Royal Medical and Chirurgical Society, March 9th, 1847, is to show that the disease known to practitioners under the above title is really erysipelas, commencing in the fauces, or in their neighbourhood; and that it has been generally supposed to be confined to the larynx, and has been termed laryngitis, in consequence of its often proving fatal before the erysipelas has had time to spread far from this part.

In support of this view, he relates five fatal cases of this disease that have re-

cently occurred in London: one in his own practice in King's College Hospital; three in the Dreadnaught, the particulars of which were given him by Mr. Hudson; and one in Charing Cross Hospital, under the care of Mr. Avery, the particulars of which have been published in the medical journals.

These cases, the author observes, were clearly examples of the same disease; but they did not all begin exactly in the same manner. In three, the inflammation commenced in the fauces; in one, it commenced in the parotid gland; and in one, the first appearance of it was an erysipelatous blush at the angle of the lower jaw.

In all the cases the inflammation soon spread to the glottis, and produced there the same effects—namely, redness and great thickness of the epiglottis, and of the lips of the glottis, with effusion of sero-purulent fluid in the submucous cellular tissue—to such a degree as, in three of the cases, to produce almost sudden closure of the glottis, and consequent suffocation.

In three of the cases in which death occurred within a few hours after the inflammation of the glottis came on, and within twenty-four or thirty-six hours from the commencement of the malady, the inflammation had not time to spread far, and the air-tubes, and lungs, and other organs, were sound.

In the other cases, which were more protracted, the inflammation had spread down the air-tubes, and there were marks of inflammation in the chest, and an infiltration of a sero-purulent fluid in the loose cellular tissue of the neck.

The occasional connection of laryngitis with erysipelas was noticed by Dr. Cheyne in his article on laryngitis in the *Cyclopædia of Practical Medicine*; and again by Mr. Wood, in a paper published in the seventeenth volume of the *Medico-Chirurgical Transactions*. The first person to treat expressly of it was Mr. Ryland, of Birmingham, in his work "*On Diseases of the Larynx*."

The author cites the facts related by Mr. Ryland, and observes that they prove conclusively that inflammation of the larynx, causing great swelling of the lips of the glottis, and infiltration of fluid in the submucous cellular tissue, and thus leading to speedy suffocation, occasionally results from the poison of erysipelas.

He considers the following circumstances favour the opinion he has expressed as to the nature of the disease:—That the inflammation spreads in the same mode as in erysipelas of the skin, presenting the deep redness and swelling, and infiltration of a serous or sero-purulent fluid, which occur in that disease; that it is more fatal than ordinary laryngitis; and that it occurs most frequently amongst the inmates of hospitals in which erysipelas prevails, and amongst such of them as are peculiarly liable to erysipelas—viz., convalescent from continued fever or eruptive fevers, and those labouring under secondary syphilitic ulcers.

The author concludes with suggestions respecting the treatment of the disease, and some general remarks on erysipelas.

Mr. Holmes Coote said that last summer two cases of the disease under discussion occurred in St. Bartholomew's Hospital. One patient was just recovering from a large ulcer in the leg, when he was seized with great difficulty of breathing; leeches were applied to the throat, and antimony and other powerful remedies freely employed, but the difficulty increased, and laryngotomy was resorted to. The patient, however, sank; and, after death, the cellular tissue around the glottis was found in a state of inflammation; pus was infiltrated beneath the tissues, some portions of which were mortified. In another case, a patient, having a slight wound of the hand, and diseased wrist-joint, was suddenly seized, when recovering, with the same symptoms as those observed in the former case. The larynx was opened early, but without benefit. The disease seemed not only a consecutive one, but it appeared that it might come on at any time, as the result of some atmospheric influence. It did not seem to be the result of any particular disease, as there was none in the hospital at that time. With respect to treatment, he believed that in the more formidable cases we had no means of arresting its progress. He had no faith in local applications to the epiglottis, and thought that the treatment recommended by Dr. Budd was the most likely to be successful.

Mr. Busk related two cases which had occurred in the Seaman's Hospital, for the purpose of recommending a mode of treatment, which in these instances had been found quite successful. This treatment consisted in making a great number of minute punctures on the back of the tongue, the uvula, and pharynx, with a

sharp-pointed bistoury. The operation was repeated every half hour for two or three hours. The parts should be afterwards gargled with warm water; there was a great discharge of serum, and the relief was sudden and decided. He attributed the recovery in the two cases to which he had alluded, to this plan of treatment. It was only carrying out the principle recommended some years since by Sir H. Dobson, to be followed in cases of erysipelas affecting external parts. He, Mr. Busk, believed that this proceeding would often prevent the necessity of laryngotomy.—*London Medical Gazette*, March 19, 1847.

30. *Tincture of Iodine in obstinate Intermittent Fevers*.—Dr. SEGUIN of Alby, in a short paper in the *Journal des Connaissances Médicales pratiques*, December 1846, states that he has found the tincture of iodine a very valuable and effectual remedy in cases of intermittent fever, which have resisted quinine and other antiperiodics. It is not equally effectual, he says, in recent cases. He gives it in doses of 30 drops in a little sweetened water, in three doses during the apyrexia, and gradually increases the dose to 40, 50 and even 60 drops.

31. *Mediastinitis*. By Dr. C. PFEFFER.—A young man, aged 18, of scrofulous habit, was admitted into the Bamberg hospital, with symptoms of hypertrophy of the heart, and a violent pain in the left breast, accompanied by cough and febrile symptoms, which disappeared on venesection, leaving merely a feeling of fulness and constriction. After eight days, a fluctuating swelling arose under the muscles above and at the side of the sternum. It was opened, giving exit to a large quantity of yellow matter; in the incision, a fistulous opening, three inches deep, was seen to lead between the cartilages of the third and fourth rib, down to the pericardium; a second one, between the cartilages of the second and third ribs, two inches long, conducted to a bare rough portion of the sternum. This speedily enlarged, so that in a few days the finger could be passed in, and the corpus was separated from the manubrium sterni, by the force of the heart's action. After the opening of the abscess, so much pus was passed with the urine, as to occupy three inches in a vessel eight inches high, with relief to the patient. This ceased in a few days, and was followed by pain over the tuberosity of the tibia, and œdema of the left foot and leg. The pain was relieved by leeches. The œdema extended as high as the middle of the thigh, and was relieved by punctures and a spica bandage; but this had to be removed, on account of a recurrence of the above mentioned pain. A fluctuating swelling had now formed, on opening which, a quantity of thin ichorous matter escaped, and $1\frac{1}{2}$ inch of the tibia was found to be bare of periosteum, and in a state of commencing necrosis. Whilst this proceeded, the abscess in the breast ceased for a few days to secrete pus, and the carious portion of the sternum began to granulate. A return of the secretion here was followed by a drying up of the sore on the tibia, which was of a lively red, and put on the appearance of hospital gangrene only the day before death, which followed forty-five days after admission. On the previous day, a new fistula appeared between the fourth and fifth ribs, on the left side.

On dissection, the carious portion of the sternum was found covered with a cartilaginous pseudo-membrane, $\frac{1}{2}$ inch thick. A cylindrical cyst, 1 inch in diameter, and with walls $\frac{1}{2}$ inch thick, was found under the sternum, extending from the beginning of the manubrium to the insertion of the cartilage of the seventh. Into this the three above mentioned fistulae opened. The lungs were healthy; the left ventricle hypertrophied; the right dilated. The left kidney contained, in its inferior half, isolated purulent cysts and numerous purulent points.

This case is interesting, from the twice occurring alternations of the purulent discharge between the carious sternum and tibia, and in relation to the still disputed points of absorption of pus and purulent diathesis. Here we have evidently to do with a general evil. Had absorption taken place, the characteristic fever would certainly have been present, together with the symptoms of pulmonary affection during life, and abscess in them after death. It is also instructive, from the source of the pus in the urine having been found in the kidney.—*Monthly Journ. Med. Sci.*, Feb. 1847, from *Zeitschrift für Rationelle Medizin*.

32. *A Simple Remedy for Cramps in the Lower Extremities*.—By Dr. S. A. BARDSELY,

of Manchester. Having myself been for many years a martyr almost every night to this torturing malady, and having tried in vain many of the "thousand and one" remedies usually prescribed for relief, I was at length led to reflect upon a fact which had hitherto escaped my attention, viz., while sleeping in a chair, with my lower limbs, if not touching the floor, yet so depending as to form an inclined plane with the whole of my frame, that I was in this position never disturbed by cramps; and upon inquiry, I found other sufferers from habitual cramps were under the same predicament. These facts, in connection with some physiological considerations, induced me to put into practice the following plan, which has proved decidedly successful. My plan is to sleep upon an inclined plane, which is effected by taking care that the bed or mattress should incline twelve inches from the upper to the lower part of the bed; and for this purpose the lower feet were cut down so as to form this inclination. I will now state two facts, which are sufficient tests that neither the imagination nor intemperate diet were the causes of my habitual cramps. 1st. That after my trial of the inclined plane for seven consecutive nights with complete success, the housemaid, unknown to me, had raised my bed to its usual horizontal level, and, unconscious of the change, I went to sleep, when shortly afterwards the cramps were so severe as to compel me twice to alarm the family by my cries and moans; and it was not until I arose in the morning that I discovered the change in the form of my bed. 2d. The other test is the one which I made six weeks ago. After very spare diet of twenty-four hours, I replaced my bed from the inclined to a horizontal position, when shortly after I awoke with dreadful cramps—so violent in the muscles of the thigh and legs as to require two persons to hold the limbs down in order to apply friction, with stimulants, both external and internal; indeed, the paroxysm was so severe and continued as to be accompanied with sickness and faintness. I deem it necessary to give a caution to sufferers from cramps, that the disorder is almost always connected with a weak or imperfect state of the digestive organs, and therefore, although the method now stated for relief will allow the sufferer several luxuries hitherto forbidden, yet there must be limits placed to such indulgences if he expects to pass the nights entirely free from his malady.—*Lond. Med. Gaz.*, May 1847.

33. *Rigidity of the Arch of the Aorta.*—Dr. BELLINGHAM has called attention to a condition of the arch of the aorta which, he states, is often mistaken for regurgitant disease of the aortic valve, viz., rigidity and inelasticity, with more or less weakness of the parietes of the vessels, with or without dilatation. His views of the production of dilatation of the aorta are, that it is due to regurgitation of the blood from the carotid arteries into the inelastic vessel, and not, as is commonly supposed, to the distensive force of the left ventricle, acting upon the diseased arterial coats. The paper, which is one of much interest, terminates in the following *resumé*:—

1stly. That under certain circumstances, the blood regurgitates into the arch of the aorta, from the carotid and subclavian arteries during the diastole of the ventricles.

2dly. That regurgitation into the arch of the aorta occurs, whenever the coats of this vessel have become rigid and inelastic from previous disease.

3dly. That regurgitation into the arch of the aorta from the carotid and subclavian arteries, is capable of developing a sound, which has a great resemblance to the *second sound of the heart*, and is audible at the same period of the heart's action.

4thly. That a rigid and inelastic condition of the coats of the arch of the aorta, combined with roughness of the interior of the vessel, and slight increase of its calibre, is characterized by certain well-marked physical signs, which will enable it in the majority of cases to be readily diagnosed.

5thly. That the physical signs of this morbid condition of the arch of the aorta, resemble those of valvular disease, and have probably often been mistaken for it.

6thly. That the form of valvular disease with which it is most liable to be confounded, is a state of the semilunar valves of the aorta permitting regurgitation, which it resembles in a murmur accompanying the second sound of the heart, in the jarring pulse, and in the visible pulsation in the arteries; symptoms which heretofore were supposed to be pathognomonic of regurgitations through the aortic orifice.

7thly. That the morbid deposits which occur in the arch of the aorta, are not

the result of inflammatory action either of an acute or chronic character; neither can they be considered as the result of the natural degeneration which the tissues undergo in advanced life; but that they ought to be ranked among adventitious deposits.

8thly. That dilatation of the arch of the aorta is more frequently the result of regurgitation into this vessel from the large branches which come off from it, than of the increased force with which the blood is propelled by the left ventricle, or than of any impediment to its passage through the remote or terminal branches of the aorta.

9thly. That our knowledge of the fact, that regurgitation into the arch of the aorta occurs in cases where this vessel has become inelastic from disease, enables us to explain the cause of the *second sound* heard in cases of *aneurism of the arch of the aorta*, and to account for the second impulse felt where the aneurism forms a tumour externally.—*Dublin Medical Press*, April, 1847.

SURGERY.

34. *Pathological and Clinical Observations on Cancer.* By J. HUGHES BENNET, M. D. —In this very interesting paper, which was read to the Med. Chirurg. Soc. of Edinburgh, (Feb. 3.) the author confined his observations to the four questions connected with cancer, which more particularly interest the medical practitioner, namely, 1st, Is there any anatomical character which will enable us positively to distinguish a cancerous from any other kind of growth? 2dly, Is there any evidence that cancer is ever spontaneously curable? 3dly, What means do we possess of diagnosing cancerous from other tumours or growths in the living subject? and, 4thly, What influence should our present knowledge of diagnosis have upon the treatment?

1. *Is there any anatomical character which will enable us positively to distinguish a cancerous from any other kind of growth?* A cancerous growth may contain the following elementary structures:—1. Molecules and granules; 2. Nucleated cells of various shapes; 3. A filamentous or fibrous tissue; 4. A viscous fluid; 5. Blood-vessels; 6. Fatty matter; 7. Pus, and compound granular cells; 8. Black pigmentary matter; 9. Earthy matter. Of these, some are accidental or only occasional, and others essential or invariably present. The essential elements of cancer are, 1st, A fibrous mesh-work or stroma; 2dly, Nucleated cells; 3dly, A viscous fluid in which these float.

The fibrous tissue of cancerous growths exactly resembles that found in lymph, or in the healthy tissues of the economy. It may be formed, either by deposition or by means of cell growth. In the former case, filaments more or less delicate, and closely aggregated, may be seen, crossing each other or running in bundles, forming various kinds of mesh-works in which the cells of cancer are deposited. In the latter case, we can observe fusiform cells splitting up into fibres, and are able to trace their formation from round, oval, or caudate cells, until perfect fibres are formed. These cells, (called by Lebert *fibro-plastic*,) are of a round or oval form, varying in size from the $\frac{1}{100}$ th to $\frac{2}{3}$ th of a millimetre in diameter. Sometimes they possess a distinct nucleus, about the $\frac{1}{100}$ th of a millimetre in diameter; at others, contain only several molecules and granules. Acetic acid causes these bodies to undergo very little change. They become somewhat paler, but there is no marked difference in this respect between the nucleus and cell wall. These cells, in their different stages of development into fibres, have been frequently mistaken for those of cancer;—Müller placed them among cancerous growths; and hence the erroneous opinion, that the caudate or spindle-shaped cell is characteristic of cancer. Fibrous tissue may be arranged so as to form loculi, containing a viscous fluid, with or without cancer cells, constituting the colloid tissue of authors.

The nucleated cells peculiar to cancer vary greatly in shape and size. Sometimes we see nothing but oval bodies about twice the size of a human blood globule, or closely resembling, except in colour, the oval blood corpuscles of the llama or camel. They measure about the $\frac{1}{2}$ th of a millimetre in length, and $\frac{1}{100}$ th or $\frac{1}{120}$ th

of a millimetre in breadth. These oval bodies are the nuclei of cancer cells. Sometimes they exist alone; at others, we may observe, by careful management of the light, a round or oval delicate cell wall, frequently resembling a mere shadowed halo, in the fluid in which it floats. On adding acetic acid to them, we find the cell wall disappear, whilst the nucleus becomes more distinct than formerly. Such is the character of a cancer cell in its young state. At a more advanced period of development, the cell wall is more distinct. The nucleated structure is now round or oval, its medium diameter being about the $\frac{2}{3}$ th of a millimetre, with a round or oval nucleus about the $\frac{1}{10}$ th of a millimetre in diameter. The addition of acetic acid always produces a remarkable change in these bodies, causing the cell wall to become very transparent and faint, and the nucleus to assume an unusual degree of distinctness. Hence, the author considers that Dr. Walshe has committed a fundamental error in the histology of cancer, when he says, p. 33 of his treatise, that "the ultimate microscopical cells of cancer are insoluble in cold and boiling water, and are not seriously affected by acetic acid."

Dr. Bennett minutely described the further growth of these cells, which he illustrated by diagrams, showing how they multiplied from cell rising within cell. It is owing to this cellular structure, that cancer owes the reproductive power which constitutes its malignancy. The cells occur isolated or in groups, surrounded by the other elements of the growth, but more especially by the fibrous tissue.

The third essential element in cancer is a gelatinous fluid. On cutting through a scirrhus tumour, however hard it may be, we may generally succeed in scraping from its surface, a fluid more or less transparent. In soft cancer it is more abundant, and contains the granules and cells previously described. In some forms of cancer, however, it constitutes a very large proportion of the mass, presenting a gelatiniform or mucilaginous appearance, varying in colour from a pearly white to a deep amber, and in consistence, from a slightly viscous fluid, to a firm semi-solid mass. Collections of this kind may occur in loculi formed by fibrous tissue, or in cystic tumours perfectly structureless, or containing only numerous molecules and granules, constituting the simple colloid tissue of Gluge and Lebert. When associated with cancer, however, it contains a greater or less number of the cells previously described, in various stages of their development. In the case just narrated by Dr. Paterson, the gelatinous matter within the loculi of fibrous tissue, contained numerous cancer cells in an advanced stage of development, enclosing secondary and tertiary corpuscles, all of which presented the characteristic reaction on the addition of acetic acid.

It is the relative amount of the three essential elements of cancer, now described, which constitutes its peculiar form. If the fibrous element be in excess, it constitutes scirrhus. If the corpuscles be numerous, encephaloma is produced—and if the fluid abound, and is collected into loculi, we call it colloid cancer. There is no other difference between these three forms than this, and Dr. Bennett expressed his conviction that there was no essential distinction between them. He pointed out, that we frequently find all these forms of cancer in the same tumour, in one place, scirrhus or hard cancer, in another, encephaloma or soft cancer, and in a third, gelatiniform, alveolar, or colloid cancer.

The non-essential elements of cancer, such as blood-vessels, pus, fatty, pigment, and earthy matters, &c., modify the external appearance of the growth in particular cases, but are not constant. Want of time prevented the author from entering into a consideration of these anatomical complications.

At an early period in the study of histology, it was natural to conceive that a certain form of the cell should be thought characteristic of cancerous growths. The observations of Müller led to the belief, that the caudate and spindle-shape of this minute structure was peculiar to them. Hence, we find him confounding certain tumours, long denominated sarcomatous, and which wholly consist of fusiform cells, with cancerous or malignant growths. These, however, have no power of reproduction, and although often associated with cancerous cells, should not be confounded with them. From the results of many examinations, Dr. Bennett was satisfied, that there is no one form of cell which can be considered as at all times characteristic of cancer. The caudate and spindle-shape of these bodies are common to fibrous structures in general, frequently seen in lymph, and espe-

cially, in the exudation forming the granulations on ulcers, recent wounds, vegetations on the endocardium, &c. &c.

The structure of the cell, and the action of acetic acid upon it, is much more distinctive. If the corpuscles are in that stage of growth in which they present a distinct nucleus with contained nucleoli, and if on the addition of acetic acid, their external wall be rendered more transparent, whilst the border of the nucleus is apparently thickened, they are highly characteristic of a malignant structure. But even this is not an absolute and invariable mode of distinction; besides, it is only applicable when the cells have arrived at a certain stage of development. Dr. Bennett had frequently seen young epithelial cells, under certain circumstances, present all the characters just mentioned, with the exception of enclosed nucleoli, and undergo the same reaction with acetic acid. This is very apparent in some cases, where effusion has taken place into the lateral ventricles of the brain, when the epithelial cells of the choroid plexus become separated, swell out from endostosis, assume a globular form, and if young, the cell wall is partially dissolved in acetic acid, whilst the nucleus is unaffected. The same occurs with the epithelium of the bladder. He has found in the bladder, a fluid having all the external appearance of pus, and on examination, shown them to consist of round, oval, and caudate nucleated cells, exactly resembling those found in cancer, and acting with acetic acid in the same manner. Yet the lining membrane of the bladder, the ureters and kidneys, were perfectly healthy. We need not wonder, then, that epithelial cells have frequently been mistaken for those of cancer, even by histologists, and that many growths, consisting of hypertrophy of the epidermis, or epithelium, as in several so-called cases of cancer of the lip, ulcerated warts, excrescences, &c., should have been mistaken for malignant growths.

Dr. Bennett stated that he was not aware of any tissue, in which a fibrous and a cell structure, such as had been described, were combined, and he was, therefore, inclined to think, that whenever we find cells of this kind deposited between the meshes of a filamentous structure, we may be satisfied that cancer is present. If we trust to the form of the cell alone, we may confound epithelial growths with cancer—if we trust to the fibrous elements alone, we may mistake sarcomatous growths for it. But in no case, so far as his experience has yet gone, can the two be associated without the existence of malignant growth. This character, then, he thinks one which will apply to all forms of cancer. In many cases, the form and appearance of the cells, to an experienced eye, will be sufficient, this, more especially, when they are fully developed, and the influence of acetic acid upon them observed. In difficult cases, the conjoined character of the cells and fibres, and their relative position with respect to each other, will enable us to determine the point with more exactitude. To arrive at a knowledge of these facts, however, considerable skill in the manipulation of the microscope is necessary, and a very intimate acquaintance with the healthy and morbid tissues of the body. To distinguish the relative situation of the cells and fibres, especially when mucous membranes are the object of investigation, a section, by means of Valentin's double-bladed knife, is also in most cases essential.

2. *Is there any evidence that cancer is spontaneously curable?* Of the ultimate causes of cancer, or why an exudation thrown out from the vessels should ever undergo the peculiar transformations described, we know nothing. Observation and experience, however, coincide with the modern theory of cell growth, in attributing to it a reproductive power, on which its malignancy and power of spreading from tissue to tissue depends. Is this process ever checked? A general opinion prevails, that cancer is necessarily fatal. Dr. Bennett did not coincide in this opinion, because it was not easy to understand why nature should never cause the degeneration and disappearance of this one particular growth alone, whilst every other tissue and form of cell-life was occasionally abortive.

Trousseau, Hodgkin, Cruveilhier and others, have frequently traced the conversion of scirrhus into ossiform matter, in the lower animals and in man. Dr. Walshe on this subject, observes, "I feel myself justified in affirming, that after careful investigation of the point, that if the bony lamellæ actually continuous with some part of the skeleton, and which formed a marked characteristic of certain cancers connected with osseous structure, be excluded from consideration, the phenomenon in question will be found to be much more written of than observed.

(Treatise, p. 81.) Dr. Bennett stated that he had seen this transformation into calcareous matter in five cases, and presented four preparations to the Society, taken from three of these. The first preparation was a portion of a large soft cancer, lobulated externally, taken from a case of Dr. Paterson's preserved in spirit. A microscopic examination showed it to contain numerous cancer cells, deposited in areolar tissue, combined with an immense number of crystalline masses of phosphate of lime. The second preparation was a dried section of this tumour, the volume of which was only slightly diminished, and seemed to be wholly formed of calcareous matter. The third preparation was a dried portion of intestine, with a mesenteric gland attached, the external portion of which was converted into calcareous matter, where fresh cancerous matter could still be squeezed from its centre, exhibiting the characteristic cell structure, mixed with a quantity of earthy matter. The fourth preparation was a dried portion of mesentery, studded over with enlarged mesenteric glands, completely calcareous, removed from the body of a female who had died from scirrhus and chronic stricture of the pylorus. This series of preparations, Dr. Bennett considered, offered conclusive evidence, that cancer is capable of undergoing the calcareous transformation.

It has been stated, that cancer sometimes becomes transformed into fibrous or fatty tissue, and thus produces cicatrices in organs. It is very difficult to prove such a statement, because if there be no cancerous cells in a fibrous tissue, it is contended that it is not malignant and never has been. On the other hand, if cancer cells be present, it is clear that we have no evidence of degeneration. There can be no doubt, that many organs and tumours are considered cancerous, which are only fibrous. Dr. Bennett had examined many so-called cases of scirrhus of the pylorus, which were only hypertrophy of the muscular and fibrous tissues of the part. He alluded to a case of Dr. Alison's he had examined, in which the coats of the stomach throughout, varied in thickness from an inch to an inch and a half. The viscus was thought by all who saw it to be cancerous, and yet he showed it to consist of nothing but fibrous tissue and fusiform cells. He had also proved many tumours, supposed to be cancerous, to be only fibrous.

Professor Bochdalek of Prague, formerly pathologist to the hospital there, and now Professor of Anatomy in the University, published a memoir in 1845, "On the Healing Process of Cancer in the Liver." He describes the cancer in this organ, as breaking down into a cream-like matter, the fluid parts being absorbed, and the whole shrinking together, forming a puckering on the surface often corresponding to a fibrous mass or a fatty material, in which collapsed cancer cells may yet be detected. In some livers, he has seen these cicatrices in all stages of formation, cancers in some places, and perfect cicatrices in others. In Prague, he tells us there are between 400 and 500 bodies examined annually. Among these, cancer of the liver occurs about 16 or 17 times, and among these, proofs of healing may be observed between 6 and 7. (*Oesterreichische Wochenschrift*, April 26, 1845.)

Dr. Bennett had frequently seen these appearances in the liver, but he had never been able to satisfy himself that they were proofs of cured cancer. There are strong probabilities in its favour, however. Tubercular masses are rare in the liver of adults, and such lesions must depend either upon cancer or upon chronic abscesses. He exhibited to the Society two wet preparations of livers, with puckerings on their surfaces, some corresponding to white fibrous cicatrices, and others to rounded yellow masses, varying in size from a pea to that of a walnut. When recent, these latter were thought to be cancerous by all who saw them, yet a minute examination showed them to be formed principally of fibrous tissue, mixed with irregular fatty particles, and debris of cells, so indeterminate in their character, that their nature could not be ascertained. In some of the cases of Prof. Bochdalek, cancer was associated with these cicatrices, and that cancerous ulcers occasionally cicatrize, is well known to surgeons.

When in Prague last autumn, Dr. Bennett, having been previously acquainted with Professor Bochdalek's memoir, carefully examined the preparations of the lesion described, in the pathological museum of that city. He recognized them to be the same in appearance as those he now presented to the Society. Professor Dany, the present pathologist, was so polite as to take the preparations out of their bottles, make fresh incisions into them, and permit Dr. Bennett to examine them microscopically. He found that the cicatrices, though altered by spirit, were

principally composed of fibrous tissue; the nature of the softer matters could not be ascertained. This was no proof of cancer. He was then shown a similar preparation of a liver, together with a stomach taken from the same case, the former having similar puckerings, and the latter a cancerous ulcer of which the individual died. Whether this was a mere coincidence it would be difficult to say. M. Sedillot has lately asserted that cancer cells are occasionally elongated, so as ultimately to form fibres, but it is not certain whether he has clearly distinguished the fibro-plastic element so often present in cancerous tumours, from those of cancer. Dr. Bennett considered, that taking every statement into consideration, it was by no means improbable, that cancer might occasionally degenerate into a fibrous mass, although we still require positive proof of it. At all events, they have convinced him of the necessity of making further researches on this subject.

The same difficulties exist with respect to the supposed degeneration of cancer into fat. Nothing is more common, than to find associated with cancer, a yellowish friable matter, more or less abundant, resembling cream in colour or consistence, or presenting a bright gamboge yellow tint. This, on examination, is found to consist of numerous granules, which disappear on the addition of ether, and refract light, like globules of oil. Whether these granules are elementary nuclei and cells, or whether they are the result of the disintegration of cells previously formed, is unknown.

What means do we possess of diagnosing cancerous from other growths in the living subject? The local symptoms and general signs of cancer, have frequently been found to be insufficient for the purposes of diagnosis, such as the lancinating pains, unequal surface, hardness, elastic feel, softening, ulceration, the surrounding tissue being affected, a general alteration of the constitution, and a tendency to return after excision. All these symptoms have, at various times, been proved to be connected with epidermic, fibrous, fatty, or cystic growths.

In the living subject it is clear, that the anatomical arrangement of the fibrous and cellular elements, observed in morbid specimens, can seldom be seen. We have no opportunity of obtaining a section. Still, there are certain places where the detection of such cells as have been described, exhibiting their peculiar change under the action of acetic acid, will enable us to diagnose a malignant growth with certainty. Over most of the surface generally, for instance, where the diagnosis most concerns the surgeon, a group of such cells cannot leave us in doubt, because the epidermic scales in such cases never resemble them, as they do in internal organs, as the bladder, stomach, or brain. Thus, although anatomically, and in all cases, we cannot depend upon the form or even structure of the cell, as connected with the epidermis alone, we can. Hence, to the surgeon, a minute examination is a more precious means of diagnosis, than to the physician. Various ulcerated and fungoid tumours of the surface may be diagnosed with certainty, from an examination of the cells alone, whilst in fluids discharged from the stomach, bowels, or bladder, this means of diagnosis is not so certain.

Many instances are now on record, where, in doubtful cases, such an examination has determined the nature of the growth. Several have been lately published by M. Sedillot of Strasburgh, and others may be found in the works of Lebert and Vogel. There can be no doubt, that many tumours and ulcerations exist, which, to the naked eye, and according to the ordinary symptoms, resemble cancer, although they are perfectly innocent. To all such growths, Lebert has given the name of canceroid. Among them may be placed many so called cancers of the lip, which, on examination, are often found to be fibro-epidermic; many tumours of the breast, which are either fibrous, fibro-epidermic, or cysto-sarcomatous; fungoid swellings of the dura mater; the ordinary fungus of the testicle, which Messrs. Goodsir and Syme have shown to consist of healthy granulations; and probably, the so-called chimney-sweep's cancer of the scrotum. Several instances were referred to, published in the writings of Lebert, Vogel, Syme, and Sedillot.

There were some cases, no doubt, where, after every means of research had been employed, doubt as to the nature of the growth would still exist. All those who contend for the exclusive advantage of any one sign or symptom, must have very limited notions of disease or diagnosis. No one could repudiate the use of the microscope more than the author was disposed to do, as a sole means of diagnosis in any case. But he contended, that this instrument judiciously employed,

is likely to be as useful in the hands of the surgeon, for the diagnosis of cancerous and canceroid growths, as the stethoscope is in the hands of the physician for the diagnosis of diseases of the chest. Neither instrument should be alone depended on, but conjoined with the history and other symptoms, will lead in many cases, to more correct conclusions than it is possible to arrive at by means of the unaided senses. Dr. Bennett cited a few instances, which had come under his own observation, confirmatory of this statement, and alluded to others brought forward by the writers formerly mentioned. A few dozen cases, however, could not be considered a sufficient basis for this important inquiry. He believed that the whole subject was yet to be worked out, and considered it above all things desirable, that some young surgeon would dedicate his time and energies to the task. No doubt, it was troublesome to be under the necessity of entering into new researches on points which many consider already determined, and where such decided opinions respecting them had been so long held by practitioners. Such, however, were the sacrifices which the progress of medical science required. In the meanwhile, Dr. Bennett invited surgeons to forward him specimens of morbid growths in a fresh state, or to enable him to examine the ulcers, or discharges from malignant and doubtful growths or ulcers. He would make notes of the result, and these, with a short history of the case, might form the groundwork of a more extended series of researches, which would no doubt, before long, lead to some positive result.

4. *What influence should an improved knowledge of the pathology and diagnosis of cancer have upon the treatment?* Most of the practical points connected with the surgical treatment of cancer, were fully discussed in the French Académie de Médecine, in 1844, on the occasion of a paper read by M. Cruveilhier. That eminent pathologist maintained, that surgeons are continually cutting out fibrous tumours from the female breast, which never undergo cancerous transformation, and which, therefore, might be allowed to remain with perfect safety. So far from fibrous growths ever degenerating into cancer, he considers that they indicate a state of constitution altogether incompatible with malignant action, so that in being able to detect them in the breast or uterus, he has confidently assured the patients that they would never be subject to cancer. In support of these statements, he brought forward cases of tumours in these situations, which had existed from ten to thirty years, and cited one exceptional instance, where cancer having attacked a breast already the seat of fibrous tumours, these remained unaffected, while all the rest of the organ was cancerous. He pointed out, that cancer always depended upon a constitutional disorder, that local disease was the effect and not the cause, and to remove the first, whilst the latter was allowed to remain, was an irrational practice.

In these opinions M. Cruveilhier was supported by MM. Velpeau and Jolly. The first maintained, that he could diagnose fibrous, or what he called fibrinous tumours of the mamma, which never degenerated into cancer, although he frequently removed them, to tranquillize the patient, or to get rid of a deformity.

On the other hand, it was contended by most of the practical surgeons of Paris, including the names of Blandin, Gerdy, Roux, Amussat, Berard, and Lisfranc, that it was impossible to diagnose fibrous from cancerous tumours of the breast at an early period; that the former were only an incipient stage of the latter, and consequently, frequently degenerated; and that the best practical rule to be followed was, always to excise them as early as possible. They maintained that the disease was first local, and that the cachexy was induced by absorption from the morbid growth—was the cause and not the result. They denied the law of incompatibility sought to be established by M. Cruveilhier, and denounced his paper as one likely to be followed by the most injurious consequences in practice.

In support of these opinions, numerous cases were cited, having all the symptoms and characters belonging to what M. Cruveilhier called fibrous tumours, which afterwards became cancerous, and destroyed the patient. Some specimens, also, were brought forward, where tumours, originally fibrous, had apparently undergone the cancerous transformation, even in the uterus. Many surgeons brought forward instances of tumours, to all appearance truly cancerous, which were excised, and where there had been no return for a long series of years.

This celebrated discussion left the practical question in the same state as before, namely, that as a matter of prudence, all tumours should be removed from the female breast as early as possible, whatever be their nature. No one practitioner who took a part in it, appeared to be aware of the real structure of cancerous tumours, or knew that a fibrous as well as a foreign growth was invariably present in them. Indeed, many cited, as the best proof of cancer, the presence of the dense fibrous structure, often grating under the knife, which is exactly that part of the tumour which is least malignant.

A more perfect diagnosis, however, has already led to some useful modifications in surgical practice. Among these, Dr. Bennett alluded to the altered operation of fungus of the testicle, so successfully executed by Mr. Syme, as communicated to the Society. Another valuable modification has been introduced by M. Sedillot of Strasburgh. It is well known, that in many cases of incipient cancer, it has been advised to make the incision embrace a considerable portion of the sound textures, in order to insure eradication of the malignant growth. Thus the whole female breast has often been removed, although the extent of the tumour has been inconsiderable. In cases, however, where a restoration of parts is necessary, as in the lip, the rule is very inconvenient. M. Sedillot, therefore, in several cases, having satisfied himself, in the manner pointed out, that the ulcer or growth is not cancerous, has barely removed the indurated structure, and thus been enabled to preserve a larger amount of soft parts than he otherwise would have done. These operations have been perfectly successful.

In some cases, an exact diagnosis, formed by a microscopic examination, has prevented an operation which would otherwise have been determined on. Vogel gives a case of ulcerated breast of this kind. (*Icones Histologiæ Pathologiæ*, p. 127.) Dr. Bennett has seen two others, where, in a canceroid growth in the breast, he diagnosed non-malignant disease. All these cases ultimately recovered.

If, when this means of examination has been so little employed, such good results have already resulted, what may we expect when surgeons are more extensively aware of the benefits which may be derived from an exact diagnosis? Dr. Bennett believed that we were only on the threshold of the inquiry, and that the most important discoveries would yet be made in the pathology and diagnosis of cancerous growths, the influence of which upon surgical practice could not be calculated on.

In conclusion, Dr. Bennett observed, that he had carefully avoided theory. He had said nothing of the supposed mode of growth of cancer cells, whether the disease be dependent on a peculiar condition of the blood, induced by any particular regimen, climate, constitution, or other causes. He had confined himself entirely to facts, and endeavoured to show that cancer possessed a distinctive structure; that it may occasionally undergo a calcareous, and probably a fibrous transformation; that a knowledge of its structure is of diagnostic value; and that this has already been serviceable to the healing art, and bids fair to be still more so in the treatment of this class of fatal diseases.—*Monthly Journ. Med. Sci.*, March, 1847.

35. *Ovarian Dropsy treated by establishing a direct communication from without, with the interior of the cyst.* By W. H. BAINBRIDGE, Esq., of Liverpool, (*London Medical Gazette*, Jan. 1847.)—The subject of this case was a female 31 years of age, who had never had a child and who had first experienced an enlargement of her left side about July 1840. This enlargement continued to increase until when the patient was seen by Mr. B. in January 1842; the tumour was as large as the uterus in the ninth month of pregnancy. She was tapped by Sir B. Brodie and 25 pints of sero-sanguineous fluid were drawn off. The tumour again reappeared, and nine months after the first tapping she was again tapped. The enlargement of the abdomen again took place, and the patient, to avoid notice, adopted the singular expedient of compressing and flattening the tumour anteriorly, by means of a piece of wood placed on the abdomen, and firmly secured by a bandage. This contrivance, while it diminished the prominence of the tumour anteriorly, increased it in the vagina, and necessarily produced distension upwards and laterally, causing great distress, and an aggravated state of dysprœa.

Six months after the second operation Mr. B. was sent for (May 1843) and found the patient suffering excruciating pain in the abdomen and the other symp-

toms of peritonitis, supervening on rupture, Mr. B. thinks, of the ovarian cyst of the left side. She recovered from this, enjoyed afterwards good health until May 1844, when another tumour began to form in the right side. About the commencement of 1846 it had enlarged so considerably that she became anxious for something to be done for her relief. Mr. B., after careful consideration, determined to perform the following operation, which he accordingly did:—

"The patient was placed in a semi-erect position on the edge of the bed. An incision about three inches in length was made in the median line, two inches below the umbilicus, extending through the parietes, and laying bare the external surface of the cyst. On endeavouring to draw out the cyst in order to remove a portion, as originally intended, I found that such extensive adhesions existed as to render this part of my plan impracticable, which was perhaps in one sense a favourable circumstance, inasmuch as it prevented any escape of fluid into the peritoneal cavity. Nothing remained, therefore, but to open the cyst, evacuate its contents, and insert a plug so as to prevent union of the edges of the wound, and closure of the opening. About 25 pints of a sero-sanguineous fluid, similar to that in the former tumour, were drawn off.

"During the four following days there was constant discharge of a similar fluid from the interior of the cyst; on the fifth day it became purulent, thence gradually assumed the character of pure pus, and so continued up to May, amounting on an average to about 8 ounces in the 24 hours. From this period it began to decrease; meanwhile no bad symptoms appeared. The patient merely laboured under the ordinary effects of the general debility consequent on such a discharge.

"It should here be stated that, for a month after the operation, stimulant and astringent injections were occasionally used for the purpose of setting up new action and stopping the discharge, but without producing any apparent good effect."

In June the lady was well enough to take a journey, and when she returned in August the tumour had entirely disappeared.

In a subsequent number of the same Journal (*Med. Gaz.*, April 1847) Dr. B. has published the following list of eighteen cases treated upon a similar principle, and nineteen cured by nature on the same principle.

Eighteen cases of Ovarian Dropsy, treated on the principle of Mr. Bainbrigge's Operation. (*London Medical Gazette*, vol. 18, p. 469.)—An operation for relief of ovarian dropsy is recorded. An incision of about an inch and a half was made below the umbilicus; the sac was opened to about the extent of three inches, and evacuated, and a ligature passed through it, and secured externally, in order to keep the sac in contact with the abdominal parietes. There was a discharge for about a month, when it ceased, and the opening closed. The result was a permanent cure. By Mr. Currie, Liverpool.

Memoires de L'Académie Royale de Chirurgie, tom. ii. p. 431 to 444, An. 1753.—A detailed report of two cases by Le Dran, in which an incision was made into the cyst, the contents evacuated, the wound kept open, and the suppurative process established in the cyst. The result was a permanent cure, a fistulous opening remained in one of the cases for two years, and in the other for the remainder of the time up to which he had observed the case.

It appears that subsequently to these two successful cases Le Dran was in the habit of operating in this way. He says, he always found the fistula remained permanent, except in the solitary case above given, which he closed in two years. To keep open the communication with the interior of the cyst, he sometimes employed a tent, at others left the canula, or even leaden tubes in the wound, and occasionally used injections. He remarks on the inefficacy of tapping, and then says, "J'ai osé tenter une nouvelle route, et le succès a répondu à mon espérance;" from which it is natural to infer that he was eminently successful.

Lancet, vol. xiii., p. 879.—Allusion is made to the above cases; and a similar one by Portal is mentioned, in which a cure followed.

Lancet, vol. xx., p. 603.—A case, by M. Rigollot, of St. Etienne, is given, in which, after the use of the trocar, irritating injections were employed. The cure was completed in a month.

London Medical Gazette, vol. xxvi., p. 349.—A case of ovarian dropsy, treated by tapping the tumour in the vagina. Although intended merely to liberate the fluid

by tapping, the wound kept open and a continuous discharge took place. Permanent cure.

Edinburgh Medical and Surgical Journal, vol. xvi., p. 367.—A case of operation by incision,—closure of the opening by the surgeon,—spontaneous re-opening of it subsequently, of about the size of a small pea, from which, on the slightest exertion, matter flowed freely, which the operator considered an unusual effort of nature for her relief; it was followed by permanent subsidence of the tumour, and restoration of health. By Dr. M'Keever, Lying-in Hospital, Dublin.

In my case, as in the above, I regard the continuance of the discharge as an effort of nature to suppress any further development of the disease.

Medical Times, vol. viii., p. 233.—A case is quoted as having been given by Dr. Ollenroth, in which the wound was kept open, and the contents of the sac allowed to escape through it for a considerable period; followed by a permanent and radical cure.

London Medical and Surgical Journal, vol. iv., p. 428.—A case of permanent cure is recorded, by an incision into the sac; partial evacuation of its contents, and a tent left in the wound. Through the opening, a fluid, and portions of the cyst from time to time were discharged. The opening remained fistulous.

London Medical and Surgical Journal, vol. vi., p. 320.—A case, by Mr. Langley, of ovarian dropsy complicated with pregnancy. He punctured the cyst in the vagina, the contents came away, and the woman was soon after delivered. The editor remarks upon it: "The result of the case warrants paracentesis per vaginam; the advantage would be the gradual and constant discharge of the fluid by an opening so dependent." Of course he must allude to the fluid draining off as soon as formed again in the cyst, and have supposed such to have been the case in the present instance.

Philosophical Transactions, vol. xxxiii.—Dr. Houston's case of operation for ovarian tumour. He found, on introducing the trocar, that no fluid came away; but on making an incision, he succeeded in drawing off the contents of the sac, which were partly gelatinous, partly pulaceous, and very considerable in quantity. He then brought the sides of the wound together, and secured them by suture, leaving an aperture, however, through which a discharge from the cyst continued to pass for some time. The opening finally closed, and the woman was completely cured, living fourteen years after, without any return of the tumour.

Archives Générales de Médecine, vol. lviii., p. 362.—A case of ovarian abscess is given by M. Löwenhardt, of Prenzlau, in which he evacuated the contents of the ovary through an incision in the abdominal parietes. For about two months the matter continued to drain away, gradually decreasing in quantity. At the end of this time the tumour had quite disappeared, the discharge ceased, and the opening closed. He says, "La guérison était complète."

American Journal of the Medical Sciences, February, 1838, p. 380.—A case is recorded in which Mr. Mussey, in attempting to extirpate a very large ovarian tumour, was prevented doing so by numerous and extensive adhesions. He was obliged to have recourse merely to making a small incision into the tumour, through which its contents were drawn off. He kept up the opening by means of a tent. A clear liquid came away for several days; it then became purulent, gradually diminishing in quantity for three weeks; when it closed, the tumour had disappeared. A year after, the woman was quite free from any return, and was delivered of her fourteenth child.

Archives Générales de Médecine, vol. i., p. 487.—A case is quoted of an operation by Mr. Arnott, of the Middlesex Hospital, in which he punctured the vagina, and a discharge from the cyst continued for sixty-four days, when a complete cure was effected, and the opening in the vagina perfectly closed.

The editor, in his remarks, alludes to another case, similar in its nature and results to the one above mentioned, as having been published in the *Revue Médicale* by M. Recamier.

Archives Générales de Médecine, vol. xxxi., p. 427.—This is an account of an operation for extirpation of ovarian tumour, attempted by Dr. Ehrhartstein, in which, from an aperture in the external wound, serum continued to drain for some time, which afterwards changed into a milky fluid, and did not disappear till the ninth week after the operation, when the wound cicatrized, and the patient was cured.

Archives Générales de Médecine, vol. xx., p. 92.—A case is given by Dr. Dieffenbach, of Berlin, where the adhesions were such that he merely punctured the tumour after incision; a sanious matter continued to discharge itself through the wound for some time after, and the patient ultimately recovered.

Provincial Medical and Surgical Journal, vol. iii., p. 593.—Mr. Bainbrigge's operation for ovarian dropsy. In this case an incision was made through the abdominal parietes into the sac; the contents (twenty-five pints of sero-sanguineous fluid) were evacuated; a plug of lint was inserted to prevent union of the edges of the wound, by means of which a suppurative discharge was set up from the interior of the cyst, which was followed by its obliteration without a single bad symptom, and by a permanent cure.

Nineteen cases of Ovarian Disease, treated by nature, on the principle which Mr. Bainbrigge has adopted.—(*London Medical Gazette*, vol. xvi., p. 643.)—Dr. Ramsbotham relates a case of ovarian dropsy, discharged through an opening made by nature at the umbilicus; the tumour disappeared. The patient lived eight years after, and had no return of it. He also mentions a similar case of Dr. Mead's.

London Medical Gazette, vol. xxiv., p. 966.—Dr. Henry Davies gives a case of ovarian tumour in which the integuments burst at the umbilicus, and discharged a thick red fluid, which gave great relief. The discharge continued for seven years, during which the general health was good; it then closed. Two years after she died of apoplexy.

London Medical Gazette, vol. xxv., p. 396.—A case of ovarian dropsy bursting at the umbilicus is related by Mr. Douglass, of Glasgow. The woman died two months after of peritonitis. From the particulars of this case there does not appear any reason for connecting the operation and the subsequent discharge with the peritonitis.

Lancet, vol. ii., 1839-40, p. 12.—Dr. Ingleby relates a case of ulceration through the abdominal parietes, through which an ovarian cyst emptied itself. There was a discharge for some time through the opening, followed by a permanent cure.

London Medical Gazette, vol. xxxv., p. 303.—A case is given of diminution of the cyst by a spontaneous opening into the abdomen at the navel, which discharged purulent lymph, and relieved the patient in a permanent manner. By Dr. Lam-brecht.

Medical Times, vol. xiii., p. 262.—A case of permanent cure of ovarian dropsy is related as having taken place after a spontaneous opening at the umbilicus, followed by a discharge of the contents of the sac, and formation of a fistulous passage, which subsequently closed.

Dublin Quarterly Journal, vol. i., p. 519.—It is stated, that Dr. Montgomery has seen three cases in which ovarian cysts discharged their contents through the parietes of the abdomen. He does not state what the final results were; but had they been unfavourable or fatal, they would no doubt have been mentioned. A similar case is also alluded to as being at the time (January 6th, 1843) in Dr. Stephens' Hospital.

Edinburgh Medical and Surgical Journal, vol. ii., p. 180.—A case, by Mr. Anderson, is given, in which a spontaneous opening took place at the umbilicus. There was a discharge from the cyst, which lasted nine months, during which the tumour had gradually disappeared; she then died, as it would appear, from general cachexy, under which she had laboured long previous to the opening being formed. The state of this patient's health a year before the operation was such as, under any circumstances, to render it improbable that she would live more than a few months.

London Medical Gazette, vol. viii., p. 291.—A case is given of discharge of the contents of an ovarian sac through a spontaneous opening in the vagina, which ulcerated, and no doubt allowed any new formed secretion gradually to escape. The consequence was almost complete disappearance of the tumour. By Dr. Elliotson.

London Medical Gazette, vol. xxxi., p. 572.—Dr. Waters gives a case of periodical return of an ovarian tumour, and its entire disappearance two or three times after a copious discharge of a thick, yellowish, ropy fluid, *via recti et vaginæ*. After the last discharge, no return of the tumour had taken place, and the patient's health was in a satisfactory state.

Lancet, vol. ii., 1839-40, p. 12.—Dr. Ingleby gives a case of cure of ovarian dropsy, consequent on ulceration into the bladder, and permanent discharge per urethram, for upwards of a year, of albuminous fluid, shreds of coagulable lymph, and hydatids.

Lancet, vol. ii., 1839-40.—Dr. Ingleby gives a case of rupture of ovarian cyst into the intestinal canal, as evinced by the vomiting of the contents mixed with fecal matter, which he describes as lasting for some days, and followed by a cure.

Lancet, vol. ii., 1842-43, p. 422.—A case of spontaneous permanent cure of ovarian dropsy, by a discharge from the cyst per vaginam, of several days' duration.

Medico-Chirurgical Review, vol. xxiv., p. 206.—Gives three cases of cure by accidental rupture of a cyst into the vagina, and discharge through that opening; there can be no doubt that the discharge was continuous for a longer or shorter period.

"Many more cases of the above description might be adduced, if necessary, for the further elucidation of this very interesting mode in which nature operates successfully for the cure of this formidable disease.

"With respect to the *accidental cases* to which I have alluded, it appears to me that many cures have resulted from the bursting of the cyst into some portion of the intestines, or the bladder, as well as into the peritoneal cavity, under which circumstances a discharge of the fluid takes place, continuing for a longer or a shorter period, and thus terminating, as in the cases above detailed, in a more or less permanent cure. Instances of this kind are by no means rare. As to those cases where an accidental external opening has been made into the cyst through the parietes of the abdomen, as in the well-known case of the goring by a bull, &c. &c., a permanent cure has been effected on similar principles.

"The foregoing abstract," Mr. B. remarks, "professes to do no more than give a sufficient number of cases to exemplify the principle of the operation in question, and justify the conclusion I have arrived at. It is worth mentioning, that the further I extended my search the more I became convinced that this operation has been regarded either with needless alarm or culpable indifference. In presenting these as cases in point, it is to be observed, that, with the exception of the first three on the list, it does not appear that the surgeons contemplated or understood the rationale of the operation. In their descriptions they seem to overlook the main fact, or mention it in a way to show they attach little or no value to it; hence some of the cases must have laboured under serious disadvantages, arising from careless or injudicious after-treatment, or from the non-employment of subsidiary means calculated to promote a successful issue of the operation. The cases are, however, not the less on that account to be received in evidence, but rather the more; and I have no doubt that many of the cases on record in which the cure has been ascribed to different causes, or not attempted to be accounted for unless on some vague general principle, would, if more circumstantially detailed, exhibit the particular characteristic feature of the examples I have collected.

"My list more than bears me out in the ratio I originally laid down, and even the two deaths may be accounted for, as indeed they were, by circumstances totally independent of the open state of the ovarian cyst or the discharge. It may be said that more extensive research would furnish many cases in which death has occurred either during a discharge so superinduced and maintained, or after its cessation. I much doubt whether *many* such could be adduced: I have not been able to find them. Still, I admit a few might be met with, but they cannot be considered as applicable, unless it can be shown that the fatal issue might be fairly attributed to the discharge so established and circumstanced; and, even could this be demonstrated, I feel confident it would not disturb my ratio, as a counterbalancing proportion of successful cases would also be discoverable.

"Among the numerous writers on ovarian disease, such as Morgagni, Cruveilhier, Delpech, Lizars, &c. &c., few seem to have regarded this operation favourably: they either magnify its dangers or underrate its value. The cases they adduce in evidence against it do not apply. Instead of judiciously aiding nature in her friendly efforts, they interfere with and obstruct her by means of stimulating injections or irritating substances, such as canulas, leaden tubes, bougies, &c., left in the wound,—a wound which, of all others, requires to be managed with the utmost delicacy and caution. What can be more contrary to the true principles of surgery, and what other than disastrous or negative results could be expected to follow such

practice? Cases treated in this way I exclude from the category. The errors of art must not be placed to the account of the operations of nature. Dr. Bright is one of those few authors who seem to have formed correct views on the subject, though not perhaps to have thoroughly appreciated its importance. He expresses himself to the effect that in some cases the wound does not close, and that suppuration continues for months or years, and that such an occurrence, so far from being fatal, prolongs existence. This judicious observer no doubt speaks from experience."

In regard to his own case, Mr. B. says that on reconsideration of its details he should not, in any future case, in making the incision, "consider it advisable to remove a large portion of the cyst with a view to diminish the extent of the secreting surface: I should leave its gradual contraction to nature. In all the cases above given, where nature operated, the sac remained entire, and no bad symptoms followed. There is, besides, an objection to it where the sac is free from adhesions. By removing a considerable portion of a large cyst, I should have a wound of many inches in extent to bring into adaptation with one of inferior dimensions. A puckering of the edges of the cyst would inevitably follow. These puckerings could not be applied to the lips of the external wound: union, therefore, might be incomplete, thereby endangering protrusion of the abdominal viscera and an escape of matter into the peritoneal cavity,—two very serious accidents, which must be most carefully guarded against. I should simply remove as much of the sac as would leave the opening in it as nearly as possible corresponding with that of the external wound, and unite the lips of both, accurately and smoothly, by the uninterrupted suture. I am now alluding to sacs free from adhesions at the point of operation.

"But when the sac is adherent at this point, all this labour and difficulty are saved. Here it is worthy of note, that the very circumstance which most seriously complicates the major and minor operations, so called—viz. the existence of adhesions which must be torn or cut through,—is not a source of danger, but rather a great advantage for the successful accomplishment of the present plan; and, indeed, could it be ascertained, by auscultation or otherwise, that adhesion to the walls of the abdomen existed at any particular point, I should select that point for my incision, provided it presented no extraordinary anatomical obstacle."

"After the operation, all that is required is to introduce a tent of lint into the wound to prevent its closure, foment the whole of the abdomen with warm water, and keep the patient very quiet for a few days, allowing no escape of fluid at the time of dressing. The plug should be kept in firmly by means of a compress and bandage, and removed once or oftener in the twenty-four hours, according to the amount of secretion.

"In my case, after the suppurative process had been established, the quantity of matter being for some time considerable, I placed the patient on a prone couch, to allow of its gravitation towards the external opening, and its gradual escape. More or less inflammatory action must be expected to ensue after the operation; this should be allowed to subside, and no risk incurred of its increase by leaving canulas in the wound. The mere introduction of pieces of leather, softened by steeping in oil, as substitutes for the lint plug, produced so much irritation during the chronic discharge in my case, that I was compelled to have recourse to leeches and fomentations."

36. *Successful removal of an Ovarian Tumour complicated with pregnancy.*—H. E. Bunn, Esq., Senior Surgeon to the Salop Infirmary, communicated to the Royal Med. and Chirurg. Soc. (March 15) an account of a case of ovarian disease, in which he had removed the tumour by the large incision. During the operation the uterus was discovered to be in a gravid state, pregnancy being probably advanced to the third or fourth month. The patient aborted two days after the operation; she entirely recovered. The reading of this paper elicited some remarks which are of interest, especially those by Mr. Phillips and Dr. Mayo.

Mr. PHILLIPS observed that he did not rise in the hope of throwing much light on the question of the operation of ovariectomy, although he had certainly had opportunities of witnessing its performance. He would make some comments on what he thought might be considered the drawbacks referable to this operation.

1st. It had led the profession to believe that operations of magnitude on the abdominal cavity were attended with less danger and mischief than was formerly supposed. Now he thought that this opinion was erroneous, and tended to the production of mischief; for these cases could not be fairly allied to the ordinary operations on the peritoneum, inasmuch as that membrane, in cases of ovarian tumours, was from some cause so much changed in character as to be less liable to inflammation, than when these tumours did not exist. Another drawback in arriving at an opinion respecting this operation was our ignorance of the reality, most of the unsuccessful ones never saw the light. The difficulty of diagnosis in cases of ovarian tumours was also another drawback in regard to this operation. Cases had occurred in which the operation had been begun, and left off in consequence of an error in diagnosis, either no tumour being present, or if so, not of a kind that would bear removal. Even the case before the Society was strongly illustrative of our difficulty of diagnosis; for had the operator known of the presence of pregnancy he would not have operated. Indeed, had the case gone wrong, he would probably not have escaped without censure. This was not, however, the first case in which pregnancy had been overlooked, and the operation commenced, more than one such mistake being on record. Operations had also been begun in which the operator had been certain of finding fluid in the tumour; but no fluid whatever was present. Added to all these difficulties he might fairly assert that at the present moment we know of no certain means of determining the presence of adhesions. No doubt in some cases this might be ascertained; but in all cases, however ingenious the aids we might employ, no positive diagnosis on this point could be formed. What, then, were the circumstances which would justify us in the removal of an ovarian tumour? To answer this question, he might state that a very general conclusion was now come to, that the operation of tapping an ovarian cyst was a much more serious and dangerous proceeding than had been formerly supposed. It was at one time considered as a very simple matter; but his experience, and particularly as it related to four recent cases, had led him to a different opinion; for out of these four cases one died in a few days, and one only survived to undergo a second tapping. Here, then, was our position. A case was before us in which we knew that ordinary remedies were of little or no avail; and if ordinary tapping were as dangerous as he believed it, we must inquire whether there was more danger in the operation for removal than in tapping, and whether it offered a better chance of cure. The danger, he believed, was no doubt more imminent; but still tapping was uncertain, and often fatal. If we knew the honest results really of the operation of ovariotomy,—if, in fact, the unsuccessful as well as the successful cases had all been given to us, then we should be in a position of knowing how far we were justified in recommending the removal of an ovarian tumour, and not, as now, in a state of uncertainty and doubt regarding the proceeding.

Dr. Locock expressed his astonishment at the statement made by Mr. Phillips, that the danger of tapping was so much greater now than it was formerly. We had the same number of cases as formerly, and knew as much about the disease; he could not help, therefore, feeling surprised at the statement made by Mr. Phillips. He believed that the proceeding of puncturing a simple cyst was no more dangerous than it was formerly. He could not help thinking that in the comparison which Mr. Phillips had drawn between the dangers of tapping and ovariotomy he had quite overlooked the difference of the cases operated upon; but in our inquiry on this point, to arrive at an accurate conclusion, we must take into consideration the nature of the cyst. Now in cases of unilocular cyst, in which the patient was in good health, tapping would prolong life for many years; he himself had known cases of twenty years' duration. If, on the contrary, we tapped an unhealthy cyst, in a broken-down constitution, then there was little use in the proceeding; and these, and these only, he believed were the cases in which danger resulted from tapping. He had heard surgeons of great experience in this town state that death after a single tapping was very rare indeed. The late Dr. Gooch had told him that he never lost but one patient after tapping, although in a second instance severe peritonitis came on; but this was subdued, and the dropsy permanently cured. We could only, then, compare the operations of tapping and

ovariotomy, properly, by taking into consideration the nature of the cyst, its character, complications, &c. Which were the cases, then, in which we could substitute a better mode of treatment than by tapping? In solid tumours, without fluid, we had no good grounds for endangering the lives of our patients by an operation for their removal, because we knew that in the majority of these instances, though often painful and inconvenient, life might go on for many years, and the patient attain a good old age. In cases where the cyst was simple, and the health unbroken, and where the fluid was of a serous character, the experience of the last few years had convinced him that the most successful treatment was a single tapping, followed by due and well-regulated pressure; the pressure to be continued for months, at the expiration of which the patient would be well; or even if the fluid again formed, an operation of a more formidable character could be resorted to, for the little adhesion which might have resulted from the pressure would offer no obstacle to such a proceeding. He had seen several cases in which pressure had been employed with the most favorable result. In one case of common ovarian cyst, the tumour had been completely and permanently dispersed. It was well known that Sir Astley Cooper retarded the growth of solid ovarian tumours by the application of long continued pressure. A case had occurred to him (Dr. Locock) of a perplexing character, in which an ovarian cyst kept filling and bursting every six weeks into the cavity of the peritoneum. This continued for the space of twelve months. There could be no doubt that a tumour formed in the period named, and as regularly burst into the peritoneal cavity. After this had occurred eight or nine times, Sir Benjamin Brodie let out a very small quantity of the fluid from the ovarium; it was of a dark pea-soup colour. No further attempt was made to reduce the size of the cyst by evacuating it, and, of course, a quantity of fluid was left behind. To this collection pressure was made, the cyst never filled again, and it did not burst. The patient died subsequently from malignant disease of the liver, and on examination after death the ovarian cyst was found collapsed in the pelvis, containing a few shreds of coagulable lymph, similar to that found in the peritoneum. Four months since, another case had occurred to him; the cyst was simple, the health good. Eleven pints of fluid were drawn from the tumour, and firm pressure was applied, and had been kept up to the present time. There had been no return of the collection, and no sign of it. It might, perhaps, be said, that in this case sufficient time had not elapsed to determine the success of the proceeding. He (Dr. Locock) thought that the cases treated by Mr. Brown deserved the attention of the profession, though he thought that Mr. Brown was wrong in giving mercury and diuretics, for they were not only useless, but did positive harm. In his (Dr. Locock's) cases, Mr. Brown's plan was followed, but no mercury was given, and they went on well. He had said enough of this class of cases to show that in simple ovarian cysts, we had a simple remedy, which offered a fair chance of recovery to the patient. Now one kind of case was left, and that was where the growth was of a malignant character or the tumour many-cysted. In such cases, little benefit could result from tapping or pressure, and in these alone was an operation for removal to be performed; and it was in these, it must be recollected, that such operation was less likely than in others to relieve or cure.

Dr. CHOWN considered that it had become the practice to defer tapping ovarian cysts, in consequence of their great proneness to refill, but that delay had the disadvantage of rendering the operation less successful, owing to the greater magnitude acquired by the cyst. In regard to the existence or non-existence of pregnancy, the difficulty of diagnosis was deeply to be regretted, where immediate decision was necessary; the usual symptoms were so interfered with and modified by ovarian disease as to render them liable to great uncertainty. He had, some time since, a patient who became pregnant, who had a large ovarian cyst, of more than three years' standing. The usual symptoms of pregnancy were so interfered with as to prevent absolute reliance upon them. After careful application of the stethoscope, however, he heard the foetal heart. The child was born soon after the termination of the sixth month, and lived a few days. He considered the utility of the stethoscope, in such cases, to be very great. The patient is at this time nearly as well as she was prior to the event. She wears a

belt, which appears to be useful in restraining the disease. The disease has existed nearly six years.

Dr. Locock said he had seen seven cases in which pressure had been applied during the last two years, and in none had there been any return. In all the cases but one, tapping had preceded the pressure, and in one only two teaspoonfuls of fluid was drawn off. Pressure alone, in cases of solid tumour, had decreased the size of the growths.—*Lond. Med. Gaz.*, April, 1847.

37. *Case of Tracheotomy.*—Mr. Orr read to the Surgical Society of Ireland, Dec. 5th, 1846, the following interesting case. The subject of it was a female about 25 years of age, who had suffered for many months from symptoms indicating chronic laryngitis which received no relief from medicine. A suspicion that the lungs were affected, caused an unwillingness to have recourse to an operation, but the evidence of disease in those organs being obscure, while the severity of the laryngeal symptoms increased, ulceration too having, as well as could be determined by the touch, evidently encroached considerably on the epiglottis, tracheotomy was performed November 1, 1844.

The relief was complete and immediate; not the slightest bad symptom occurred to interrupt her recovery; she regained flesh and strength, but the removal or closing of the tube brought on feelings of impending suffocation. During her stay in the hospital after the operation, which continued for some months, she expectorated two whitish hard bodies the size of a lemon-seed, but as she threw them away without showing them, nothing could be determined as to their nature. The opening in the trachea showed a disposition to close, and I had on two occasions slightly to divide the margin to allow of the easy introduction of the tube. The wearing of this, too, after some time, seemed to cause irritation in the parts, which was relieved by touching them with a solution of nitrate of silver. After leaving hospital she had occasional returns of the dyspnoea, which appeared to arise from getting cold, to which she was very liable; they were neither long nor violent. In April last my friend Dr. Carte, who took an interest in the case, procured for her a tube, the edges of whose inferior opening were rounded and turned slightly in. This caused an immediate cessation of the symptoms of irritation about the trachea; she got a comfortable situation as a nurse, and as she expressed herself, was never better in her life. She continued thus till Oct. 2d. On that day about three o'clock, while sitting at dinner, stooping suddenly to feed a dog, she felt a gush of blood issue from the opening in the throat. She immediately pressed a handkerchief to her neck, and getting on a car, came to the hospital.

The blood, which came from the orifice of the canula, was projected with force and in jerks, and was of florid redness. It was restrained by pressure with a compress of lint by Mr. Phillips, the house-surgeon, whose attention to the case was unremitting throughout, and she was seen shortly afterwards by my colleagues, Professors Benson and Hargrave, and my friends Mr. Tufnell and Dr. Carte. As any attempt to remove the canula was followed by increased hemorrhage, it was plugged, compresses of lint applied over it, and pressure made by a figure of 8 bandage, crossing under the arms and over the opposite shoulders. At this time the vascular excitement seemed considerable, the face was flushed, the pulse 120, and bounding, and there was strong pulsation communicated to the tube, but the stethoscope gave no evidence as to the source of the hemorrhage, except the negative one, that there was no aneurismal tumour.

An astringent mixture, containing gallic acid, and acetate of lead was ordered. October 3d. This morning there was some slight return of the bleeding, which was easily checked by slight pressure without removing the compresses. She expectorated with slight coughing four or five ounces of bright red coagulum. On the first occasion no blood appeared to have entered the trachea. In the evening the hemorrhage returned with great violence. It was plain that if the canula had opened any vessel by ulceration that its presence in the wound must prevent any hope of a successful termination to the case. Under these circumstances, with the advice and assistance of Dr. Benson, my other colleagues being unfortunately unavoidably absent, I determined to remove the tube and supply its place with a piece of fine linen introduced like a cone, and filled afterwards with lint, which

would form both an efficient plug less irritating than the silver canula, and be capable of easy removal whenever desired. With the view of controlling hemorrhage during the removal of the tube, Dr. Benson made pressure with his finger above the sternum and below the opening in the throat; as this had the effect of stopping the pulsation which was communicated to the tube, it was hoped that it might be removed with safety; but on withdrawing it about a quarter of an inch, such a gush of blood came by its side as obliged me instantly to push it back under pain of seeing the patient perish on the instant. The compresses and bandages were reapplied, and no more hemorrhage followed.

As the stomach had become irritable, the use of the astringent mixture was discontinued, and she was directed to take ice and cold chicken broth.

October 5th. Twenty-four hours elapsed without any hemorrhage, but in the night between the 4th and 5th it returned. A consultation was held this day, but in the absence of any proof from what vessel the hemorrhage proceeded, it was not deemed advisable to undertake any operation in search of it. It was agreed to attempt the removal of the canula, which was now effected, without hemorrhage, and the aperture filled with dried sponge. Pressure was then applied as before.

It is needless to continue the particulars of the case; the bleeding returned at shorter intervals, and she expired early on the morning of the 6th, having survived the first hemorrhage eighty-six hours.

Post-mortem eight hours after death—General appearance of the body well nourished; surface very exsanguineous.

Muscular system well developed, unusually red, especially when the cause of death is considered.

The larynx and trachea were removed with the integuments about the artificial opening, the upper portion of the sternum and the arch of the aorta and great vessels arising from it.

On proceeding to make a careful dissection of the removed parts, it was found that the loose cellular tissue which usually exists in considerable quantity about the bifurcation of the trachea and the great arteries and veins at the root of the neck, was converted into a semi-cartilaginous structure matting all the parts together so as to form one apparently homogeneous mass. This being cleared away with great care, it was found that the canula had gradually worked its way behind the sternum and in front of the trachea, the rings of which were in some places slightly torn, till it reached the arteria innominata, which it had opened by ulceration, almost close to its origin from the arch of the aorta. The sides of this false passage were formed by the altered semi-cartilaginous structure before alluded to. On slitting up the aorta and innominata, the opening into the latter was found to be of sufficient size to admit a goose quill, and together with a considerable portion of the passage made by the canula, was occupied by a firm plug of coagulum which commenced in the aorta about an inch before the origin of the innominata, and appeared to extend along the arch beyond that vessel.

Very little marks of disease were found about the larynx and epiglottis. The edge of the latter was thinned and in parts irregular, and presented depressions on its laryngeal surface, as if from the effects of ulceration. The upper part was of a yellower colour and seemingly more transparent than the lower.

There was some congestion of the lungs, chiefly the right, with old adhesions about their apices. On handling them, several firm masses of different sizes were felt, which, on being cut into, were found to consist of crude tuberculous matter.

Such is a succinct account of this interesting case—interesting not only from its novel—I believe I may say unique—termination, but also from the important practical deductions which may be drawn from it, as well as the physiological speculations to which it may give rise.

And first as to the actual condition of the larynx at the time of the operation. There are many other affections which simulate chronic laryngitis: of these perhaps the principal are tumours pressing on the tube and hysteria. The post-mortem examination showed that the first of these affections did not exist. The second might produce many of the symptoms under which the patient laboured, and the comparatively normal state of the larynx may be pointed to as confirmatory of this opinion. That it may have assisted in aggravating the symptoms is possible,

but I cannot allow that it was the sole agent in producing them. In the first place, the disease commenced after repeated attacks of bronchitis; secondly, the restoration of the uterine secretion, which was at first scanty, was not followed by the slightest amendment; thirdly, there was tenderness on pressure over the larynx, which Mr. Ryland, in his work on the Larynx and Trachea, lays down as a diagnostic difference between hysteria and chronic laryngitis; lastly, the epiglottis was examined carefully at different periods by many experienced surgeons, and not one for a moment expressed a doubt as to the gradual encroachment of the ulceration. A small portion was removed for the purpose of microscopic examination, but though differing considerably from Müller's engravings of the structure of that organ, it must be attributed to its having been kept some time in spirits, as a portion of a healthy epiglottis, which had also been kept in spirits, presented almost an identical appearance. The possibility of the restoration of this organ after being partly destroyed, will, I know, be denied by many, but we know that the epiglottis is capable of increased growth, as may be seen in the specimen in the Park street museum, where that organ measures two inches in length, to which Dr. Stokes has applied the term "leaf-like expansion of the epiglottis;" and if capable of this increase of growth, why may it not also be capable of reproduction? Nor do I think that the *ipse dixit* of any author, however accurate and learned, should outweigh actual observation.

The second consideration is—Did the tubercles in the lungs exist previous to the operation? There is every reason to believe they did, as their presence was strongly suspected before it was performed, and the operation in fact deferred till the last from the fear of hastening their progress: besides, since its performance, the patient never presented any more symptoms than she had previously done. If this be the case, it is a fact of practical importance to be borne in mind in weighing the propriety of an operation. If there is a chance of tubercles in an early stage not being hastened to suppuration by tracheotomy, it might extend hopes of relief when the hand is now withheld from fear of the consequences. The immunity which the patient experienced in this case I attribute to the care with which she was guarded from cold immediately after the operation.

Thirdly, we have strongly impressed on us the necessity of watching those cases in which a tube has to be worn, lest such an unhappy termination as the present should be the result. It is plain that from the moment the false passage begins to be formed, the use of the canula becomes unnecessary, as no air can pass through it. How long in the present case this was forming, it is impossible to say, but it has evidently been the work of some months. The opening in the rings of the trachea is perfectly free and exactly opposite the wound in the integuments. A straight tube would probably have prevented the fatal result, and it may be well to remember that in cases where the tube is to be worn, and the patient is not likely to come under the surgeon's eye.

Lastly, I have only to refer to the efforts of Nature to arrest the hemorrhage. The beautiful provision by which this is effected has been so often and so ably enlarged on, that I shall content myself by directing attention to the firmness and size of the coagulum which could resist for any time the almost direct action of the heart.—*Dublin Med. Press*, Dec. 23, 1846.

38. *On the Use of Starch Bandages.* By Dr. ROGNETTA.—The starched apparatus has now been employed for a sufficient length of time, at the clinic of La Charité, in the treatment of fractures, to enable us to form a definite and mature opinion of its value. We are the more willing to weigh its value, because on this point there is much diversity of opinion among the surgeons of Paris, and because we have before us many facts capable of affording us the grounds of a decisive judgment on this subject. First, it is to be remarked, that in the Parisian Hospitals the starched apparatus has been adopted into general use by two surgeons only, namely, Velpeau and Blandin. But yet this apparatus has been everywhere tried. At first it was applied indiscriminately to fractures of the extremities, of all kinds. Velpeau himself, in his first memoir, extolled it, without any exception. In the sequel, nevertheless, unsatisfactory results were noticed in oblique fractures of the shaft of the femur, and Blandin was the first to give up this method in fractures of that kind; and Velpeau finally did the same. At the Hotel Dieu we have seen in fact.

such fractures treated by this apparatus, present, some an enormous riding of the fractured extremities of the bone, others an entire failure of reunion, owing to the starched bandage forming, as it dried, an arch projecting from the limb, while, as soon as the limb itself lost its former swelling, there was no longer a coaptation by the apparatus; the muscles contracted without impediment, and dragged the disunited parts so as to ride more and more on each other. Velpeau has doubtless been led, by cases like those described, to abandon his first opinion; and his doing so is creditable to his love of truth. Indeed, the cases which we have seen so treated at La Charité, though cured, were not remarkable for freedom from deformity. Thus such fractures must be left to the old treatment of Scultetus, with the addition of continued extension, for which purpose a starched bandage suffices. Though objectionable at the commencement, yet we must add that, towards the end of the treatment of oblique fractures of the thigh, when the patient begins to walk about on crutches, the starch apparatus answers admirably. What we have said, applies also to fractures of the body of the humerus. But as regards fractures of the neck, and of the condyles of the humerus, as well as of the condyles of the femur, the starched apparatus, if applied after the swelling has gone down, is of the greatest utility. Velpeau and Blandin apply the starched apparatus to all other fractures, namely, to fractures of the leg, of the forearm, and of the clavicle. For the forearm this apparatus possesses very great and obvious advantages. But we confess we cannot see its superiority over the common apparatus in fractures of the leg. The state of the limb cannot be ascertained till it is too late to remedy the riding of the bones, if that shall have taken place. Thus the starched bandage, though it may be regarded as an important acquisition to surgery, owing to the many applications of which it is susceptible, in various departments of practice, is far from having displaced the treatment handed down to us by Scultetus. It is proper to add, that Velpeau uses but a weak solution of starch, so that his bandages are not very stiff. The starch is first worked up with spirit, and then water is added, to bring it to the consistence of syrup. The bandages, after being dipped in the solution, are squeezed as much as possible, and the whole dries in a few hours if the limb be placed on a pillow covered with a large sheet of paper.—*Annales de Thérapeutique Médicale et Chirurgicale*, Jan. 1847.

39. *Diagnosis of Strangulated Hernia in the Foramen Ovale.*—By Dr. ROESER, of Bartenstein. Cases of hernia of the foramen ovale are rare, and except when very large, are seldom detected until revealed by dissection after death. The attention of Dr. Roeser was particularly awakened to this case from the circumstance of his having previously met with one, in which the presence of the hernia escaped detection until dissection disclosed the disease. In the present case he was more fortunate; the patient was a female peasant, about thirty years of age, who had had one child, two years ago, and another ten years before. For six years she had suffered at long intervals acute pains at the stomach, which arose suddenly without apparent cause, and spread over the whole abdomen, but chiefly around the umbilicus, and these after continuing for some hours, subsided most commonly after several attacks of vomiting. On the 16th of February, 1846, she had an attack of the usual pains at the stomach and around the umbilicus, but notwithstanding the occurrence of vomiting at the end of some hours, the pains did not subside. On the 17th, blood was drawn, and two ounces of castor-oil administered without any effect—and morphia was given. On the 18th, she was seen by Dr. Roeser. There had been vomiting in the night, without mitigation of the pains over the abdomen, and there was now an acute burning sensation at the stomach; the urine had been hot and scanty, and for the previous twelve hours none had been passed; she could not lie on either side; when placed in a sitting posture, she complained of an acute pain in the bowels, and of the bowels being projected forwards by twitches: belly was somewhat swollen, presenting inequalities, arising from distended portions of the intestines; pulse rather frequent, not hard; resonance everywhere clear, tympanitic even in the hypogastric region, though the urine had not been passed for twelve hours. No marks of hernia were found at the usual apertures. Dr. Roeser was led to examine the pectineal region, when he remarked a tenderness over the foramen ovale of the left side, which was not present on the right side. On a more particular examination, he found, at the upper and inner part of the foramen, a tumour the size of a nut, of

an elastic feel, and very painful when touched. The patient now remembered that she had felt pain in the same situation in former attacks. The tumour might have been mistaken for a gland, but that it was more tense, smooth, and less pasty, and escaped under the fingers, while pressure caused an inward pain, which extended towards the epigastrium. Percussion furnished no diagnostic, owing to the thickness of the integuments and the smallness of the tumour. On the evidence just recited, it was obviously a hernia of the foramen ovale. After the taxis had been kept up for half an hour, with great pain to the patient, both in the lower part of the abdomen, and also at the stomach, along with nausea and eructations, the hernia was reduced. There was immediate relief, and in half an hour the bowels were evacuated. On examining the region of the superior and inner angle of the left foramen ovale, there was found a deep depression, admitting the point of the finger, which depression was hardly perceptible on the right side. A truss, with an elongated neck and cushion, was applied, which fitted exactly. In this case the loop of the intestine had escaped between the two obturator muscles and the obturator ligament, and was lodged under the pectineus and short adductor. This hernia is most probably more frequent in females, owing to the greater size of the foramen; and the acute pains attendant on it must arise from the pressure on the obturator nerves. This case is a new instance of the necessity of examining all the apertures by which the viscera can escape when one is called to treat colic pains, and the so-called neuroses of the abdomen.—*Gaz. Méd. de Paris*, 6 Feb., 1847, from *Roeser and Wunderlich's Archiv. für Phys. Heilk.*, No. 3, 1846.

40. *Galvano-Puncture in the Treatment of Aneurism.*—In the *Annales de Thérapeutique* of February last, the history of a case of carotid aneurism is given, which terminated fatally under this treatment. Suppuration of the sac, with inflammation of the surrounding parts, followed the application of the galvanism, and the patient died from suffocation while the external coverings of the aneurism were attenuated, and apparently in the act of giving way. On examination after death, coagulation of the blood contained in the sac did not appear to have been promoted by the effect of the galvanism.

It appears that the galvanic current, although it may have the effect of causing coagulation of the blood, is liable to produce inflammation, not only of the integuments, but also of the sac itself. Considerable difficulty is experienced at the same time in withdrawing the needles, owing to their points becoming oxidated from the effects of the galvanic action; so that it is probable the adoption of this method of treatment of external aneurism will be found unsuccessful.—*Month. Jour. Med. Sci.*, March, 1847.

41. *Iodine and Iodide of Potassium in the Treatment of Syphilis.* By Dr. F. A. ARAN.—After an elaborate historical sketch of the introduction and employment of iodine in syphilis, Dr. Aran gives an account of Dr. Moij'sisovic's method of treating this disease, by means of iodide of potassium combined with iodine. According to this physician, his plan cures syphilis in three or four weeks. His method is to give the iodide of potassium in doses of from 5 to 20 grains, three times a-day, while, at the same time, a bath of iodine, iodide of potassium, and common salt is employed, the quantities of iodine and iodide of potassium used in each bath, being a drachm of the former, and a drachm and a-half of the latter, and the iodine is not to be added to the water till the patient is in the bath. The patient is to remain an hour in the bath, and gets into a warm bed to promote perspiration. During three days this practice is continued with the least dose of the iodide above mentioned (5 grains three times a day), when some itching of the skin begins, and then the dose of the iodide is gradually to be increased. About the 10th or 11th day a febrile state arises, accompanied with itchings of the skin, and a scarlet rash or an eruption like zoster. This rash or eruption is followed by a desquamation from the 15th to the 21st day, and these taken together indicate that the iodization has reached its maximum, and Dr. Moij'sisovic affirms, that he has never seen any return of the disease in those cases in which the eruption and desquamation ran this regular course. He employs a weak solution of iodine and iodide of potassium against exostoses, condylomata, and pustules, and uses local baths still weaker. This kind of treatment Dr. Moij'sisovic uses

against every sort of syphilitic affection, whatever be its duration, and even in primary symptoms. Dr. Aran complains that there is no account of the cases in which this treatment failed, or in which the disease returned, and calls on the physicians of venereal hospitals to make trial of this practice, with the view of determining its merits with greater certainty.

Dr. Aran says, respecting the efficacy of iodide of potassium in tertiary symptoms, that there is an almost universal agreement among those who have published on the subject all over Europe. Hassing says, of 250 cases falling under this head, in the Copenhagen Hospital, treated with the iodide, there were forty-nine deep ulcers of the throat, of which forty-two were cured, three benefited, and four only successful,—the cure in the latter being effected at last by mercurials; three cases of subcutaneous tubercles, of which two were cured; fifty-one cases of tumour of the bones and periosteum, of which six were cured and thirty-two benefited, the treatment failing in twenty-three,—while the duration of the treatment was on an average nearly thirty-six days; of seventy-three cases of osteococpium, sixty-five were cured, three benefited, and five failed,—the average duration of the treatment being about ten days; of seventeen cases of caries and necrosis, six were cured, four benefited, and seven failed,—the average duration of treatment being forty-four days. Bassereau reports a similar success in tertiary affections, in the practice of Ricord at Paris. Gauthier gives the like account of the effects of this treatment at Lyons; and Payen describes the results as equally satisfactory at Aix, on a most extensive experience of the remedy.

In the symptoms, however, which come under the head of secondary, there is not the same unanimity as to the efficacy of this remedy. Hassing describes its employment in 217 persons affected with the secondary form: Of these, twenty suffered under flat pustules (*pustules plates*), eight at the arms, ten at the genital organs, and two in both places at once; and seven were cured, four benefited, nine derived no advantage: forty-nine suffered from squamous and pustular eruption; and twenty-six were cured in the mean period of forty-eight days, nine were benefited, and fourteen derived no advantage: forty-seven had superficial ulcers of the throat and mouth; and twenty-four were cured in a mean period of about forty days, eight were benefited, fifteen derived no advantage: twenty-seven had pustular eruption; and nine were cured in a mean period of fifty days, four were benefited, four derived no advantage: there were twenty-one cases of tubercular syphilitic eruption, and fifteen were cured,—the mean duration of the treatment being about forty-four days, three benefited, and three derived no advantage: fifty-three cases of syphilitic rupia; and forty-three were cured,—the mean duration of the treatment being about thirty-nine days, seven were benefited, and three derived no advantage. We cannot make room for the analysis of the cases of the secondary form given by our author, as treated by Ricord, Gauthier, and Payen; but, on the whole, it appears that less success attends the treatment of those of that form with the iodide of potassium, than those falling under the head of tertiary symptoms. Gauthier and Payen agree that generally the older the secondary symptoms are, and the more approaching to the character of the tertiary, the more influence has the iodide over them; for example, when syphilitic eruptions become ulcerated. And Payen adds, that the iodide is particularly indicated when the secondary affections are obstinate under the mercurial treatment, and that the iodide should be resorted to at once in cases which, from their long standing, are likely to resist the influence of mercury; and in those cases in which, from the presence of debility, the constitution requires additional tone.

As regards the use of the iodide of potassium in primary symptoms, there is much difference of opinion among the authorities referred to. Hancke, Kluge, Hocken, Hassing, and Bassereau, give an unfavourable account of its effects, and Hassing doubts its efficacy even in bubo; on the contrary, Bazin, Midtler, and Payen, assert its efficacy in primary sores, without or with bubo. On this discrepancy our author remarks, that the cases referred to by Payen in particular are cases of indurated chancres; and these, he says, are not regarded by some authorities, as by Ricord, among primary affections. On the whole, then, Dr. Aran considers the title of the iodide of potassium to be considered as the basis of treatment in primary affections to be unsubstantiated, though when circumstances prohibit the common treatment, it is sometimes of service.

Respecting the comparative effects of the treatment by the iodide, when the mercurial treatment has, and when it has not, been previously used, Dr. Aran observes,—"Hence it follows that syphilitic spots, pustules, superficial ulcerations of the throat, caries and necrosis of bones, are the more easily cured by the iodide, that a mercurial treatment has been premised: and, on the contrary, that tubercles, rupia, deep ulcerations of the throat, swellings, and deep-seated pains of the bones, yield more readily when no mercury has been previously employed."

Should the iodide be used alone or combined with mercurials? Hassing's conclusion is that in the treatment of secondary affections, the combination affords no beneficial results, and this opinion is supported by the evidence of numerous cases treated in the Copenhagen Hospital, in the mixed mode. Gibert and Ricord, however, stand opposed to Hassing's decision on this point.

As to the proportion of relapses, little statistical evidence has been supplied hitherto by authors. Hassing says, that relapses are rare in the case of tuberculous eruption, syphilitic rupia and deep ulcerations of the throat, while they are common in the flat pustule, syphilitic eruptions of the papular and squamous character, and superficial ulcerations of the throat—and adds, that these relapses are most common at the end of about eleven months, though he has seen them take place at the end of seven weeks, and of between four and five years.

With regard to the proper dose, Ricord has carried the dose to the greatest extent, for example, as far as 135 grains in a day. Our author considers doses so large as altogether unnecessary, and cites as sufficient, the doses mentioned by Hassing, whose largest dose does not exceed fifteen grains a day, Gauthier, who does not go beyond thirty grains a day, and Payen, whose extreme dose is about sixty grains a day. There is this general agreement on the administration of the remedy, that the dose should be gradually augmented, and that it should be kept up for some time after the symptoms have disappeared.—*Month. Jour. Med. Sci., March, 1847, from Archives Générales de Médecine, Jan. 1847.*

42. *Descent of the Spleen into the Pelvis with symptoms of Subacute Peritonitis and of Intestinal Strangulation.*—M. Bozzi reports, in the *Gaz. Méd. de Milan*, a case of this description. The subject of it was a female 27 years of age, with curved spine, in the third or fourth month of pregnancy. From the commencement of uterogestation she had been daily affected with vomiting, and at the period mentioned, symptoms of subacute peritonitis and intestinal strangulation manifested themselves, under which, in three days, she succumbed. On post-mortem examination, the spleen was found above the right iliac region, greatly enlarged, weighing six pounds, of a black colour, and resting in part on the uterus and in part on the lower portion of the ilium and the cæcum, which were very much injected. The cord of splenic vessels was twice twisted on itself, by which the return of blood by the veins was impeded, and which was the cause of the great size acquired by this viscus. The peritoneum was injected principally at the points at which the spleen pressed. Nothing was observed abnormal in the interior of the intestines.—*Journ. des Connaiss. Méd. Prat., Nov. 1846.*

43. *Ligature of external Iliac Artery.* (*Lond. Med. Gaz., Feb. 1847.*)—The subject of this case was a man 40 years of age, admitted into the Hertford Infirmary, Sept. 2d, 1841, with popliteal aneurism on the left side. On the 6th of Sept., Dr. JOHN DAVIES applied a ligature to the femoral artery four inches below Poupart's ligament. On the 23d a slight, and on the 24th a tremendous hemorrhage came on, and Dr. D tied the vessel above the profunda, which arrested the hemorrhage. On the 9th Oct. hemorrhage occurred from the second wound, and Dr. D. tied the external iliac. The patient did well until Nov. 4th, when slight hemorrhage came on: this recurred on the 15th and 25th; the leg became gangrenous and the patient died 22d December.

44. *Diagnosis of Mercurial Sore.*—Dr. PORTER, in a valuable course of lectures on syphilis, published in the *Dublin Medical Press*, gives the following as the characteristics of the mercurial in contradistinction to the venereal sore:—

1. Mercurial sores are not necessarily circular or oval in shape, neither are their

edges regularly defined; on the contrary, they vary in these particulars, and assume different forms as they spread; their edges are often quite ragged, loose, and undermined, and their borders are often marked with a thin, transparent cuticle, like that of a newly-formed cicatrix, extending quite around them, and giving them a silvery-white appearance.

2. The bases of mercurial sores are not hard, neither are their surfaces covered with the tenaciously adherent lymph so characteristic of venereal; on the contrary, the surface of the mercurial ulcer may present every variety of shape and appearance, sloughy at one spot, deeply excavated and rapidly ulcerating at another, with exuberant granulations at a third, and exhibiting a tendency to heal at a fourth.

3. But the most striking characteristic of the mercurial ulcer is, its tendency to spread, and the manner in which it enlarges itself. Venereal sores, when not affected by phagedena, increase slowly, and having reached a given size, remain so; the mercurial generally spread quickly, and there seems to be no limit to the size they may possibly attain. I have seen an ulcer as large as my hand in each groin of the same individual. Mercurial sores, too, are easily distinguished from the venereal, when they assume an herpetic character, and heal in one part whilst they are spreading in another, which the latter never do; this latter diagnostic is often extremely valuable in ulcers of the throat and on the penis, where any extensive loss of parts may be most sensibly felt during the life of the patient. The mercurial ulceration, too, often attacks the cicatrix of a recently healed chancre, and a fresh sore is thus formed—a circumstance that does not happen to the true venereal sore, except by some accidental injury, or the application of a new infection.

45. *Mercurial Action not a Preventive of Secondary Symptoms.*—MR. HOLMES COOTE has published in the *Lancet*. Ap. 24th, a short paper for the purpose of showing that the full and distinct action of mercury, though it cures the primary symptoms of syphilis, is not the sure preventive of secondary contamination which it is commonly thought to be. To prove this he has recorded fifty consecutive cases of patients suffering from severe secondary and tertiary symptoms, of which seventeen are related in the present communication, from the analysis of which he determines that mercury is unable to eradicate the venereal poison.

OPHTHALMOLOGY.

46. *Symblepharon.*—MR. WILDE, in a highly interesting *Report on the Progress of Ophthalmic Surgery*, (*Dublin Quarterly Journal of Med. Sci.*, Feb. 1847,) gives the following account of an operation which he has performed with success, for the relief of this very intractable affection. "During the last two years," he remarks, "the number of cases where, from mechanical or chemical injuries, adhesion between the ocular and palpebral conjunctiva had resulted, which presented at St. Mark's Ophthalmic Hospital, caused us to pay particular attention to this subject, and we have found the following mode of operating perfectly successful, even in cases in which the method formerly in use, of merely dividing the fræna or extensive adhesions, had been more than once previously resorted to without effect. Some of these cases consisted in complete adhesion of either upper or lower lid, through the greater portion of its extent, to the surface of the globe; the newly-organized material, or dense, fibrous, connecting band, in some cases merely approaching the margin of the cornea, in others expanding largely over its surface, and rendering vision more or less imperfect. In some, the motion of the lid was completely checked by the shortness of the frænum and the intimate cellular connection between the lid and globe, by which the motions of both were greatly curtailed; others, again, particularly where they proceeded from the angles of the eye toward the centre of the cornea, strongly resembled fleshy ptyregia. Beside these divisions, there is another which, in a pathological point of view, should be attended to; namely, into those which are attached by their whole length, and those in which the new attachment or adventitious membrane forms a bridge, leaving a portion (at the apex of the triangle) of either ocular or palpebral conjunctiva free. In

these latter cases, a fine, flexible wire probe was passed under the arch, and where such arch or bridge did not exist, it was pushed through the lowest part of the adhesion, and its ends held by an assistant, or retained in the left hand of the operator. By this means the globe was fixed, and the lid drawn forwards. The dissection was then commenced at the point most distant from the cornea, and we endeavoured to make the flap raised up as large as possible. In effecting this, our efforts will be greatly facilitated by doubling up the probe, and by its means drawing out the ptyregium from the globe. In this way we have succeeded in dissecting a very large flap of membrane off the entire surface of the cornea. If, upon examining the point from which it is reflected from the lid, it be found to have too extensive a base in the perpendicular direction, the lid should be everted, and this again lessened by repeated touches of a fine scalpel. The extreme apex of the flap should then be attached by a fine suture to the lowest point of raw surface on the *interior of the lid*, and other sutures applied along its edges as the extent of surface may require. By this means the external mucous or cuticular surface of the old adhesion or ptyregium will be presented to the raw surface of the subconjunctival cellular tissue on the globe, and thus adhesion completely prevented. Where this latter has been but of moderate extent, we have drawn the conjunctiva together, and closed it by three or four points of fine suture. There are cases in which the base of the triangle formed by the adhesion is on the globe, and the apex at the margin of the lid, leaving a large surface of the palpebral conjunctiva unaffected, and here we might be inclined merely to divide the fræna; but if the opacity has spread over the cornea, although we may succeed in removing the more immediate cause of the deformity, the leucoma will inevitably remain, and therefore we have, in such cases, carefully dissected the membrane off the cornea, and removing a portion of the palpebral conjunctiva, substituted the flap in its place, attaching it as already described.

"We would recommend as long a time as possible to be allowed to elapse between the origin of the disease and the period of the operation, for by so doing, the band of adhesion becomes considerably lengthened, and also lessened in vascularity.

"The principle of this operation has long been known, but has not, we believe, been hitherto acted on in this country. Dieffenbach has, we believe, described a mode of operating somewhat similar in principle, and M. Blandin has related a case during the last year, in which he succeeded in removing a symblepharon by a somewhat analogous proceeding."*

[We performed this operation successfully four years ago on a patient in the Wills' Hospital. The details will be found under the head of American Intelligence in this No.—*Editor*.]

47. *Opacities of the Cornea*.—Mr. WILDE, in his *Report on the Progress of Ophthalmic Surgery*, (*Dublin Journal*, Feb. 1847,) makes the following very just remarks in regard to this affection:

"Scarcely a month passes that we do not read of the wonderful cures effected in cases of specks, feathers, nebulae, clouds, opacities, pearls, leucomas, albugos, cicatrices, and even staphylomas of the cornea, by specifics of various kinds, from prussic acid to mesmerism; but, from the days of Tobit to Turnbull, the same silence or ignorance in describing the positive pathological condition of the cornea has prevailed. Some of the cases of corneal opacity may be removed simply by time and the improvement of the general health, whilst others never can be obliterated; the difference consisting in the original cause, the precise seat of the opacity, and the existence or non-existence of synechia anterior, or attachment of the iris to the cornea, in which case, no matter how small the opacity, it never is removed; while, where it does not exist, the cornea may clear either by the efforts of nature or by the influence of remedies, notwithstanding that the opacity may extend over its entire surface. There are, however, cases of very slight opacity indeed, which never are removed, and therefore, it behoves the ophthalmic surgeon to be thoroughly acquainted with all these circumstances, in order to form an accurate prognosis, and to be able to state to patients, or their friends, what may be the final result of such cases."

* *Gazette Médicale*, Feb. 28, 1846.

48. *Causes of Strabismus.*—"There are certain cases of Strabismus in which the want of parallelism is caused by the foci of the eyes being of different lengths—that in which the focus is shortest, being almost invariably the eye to turn in, and such cases may be greatly improved, if not entirely remedied, by the use of glasses. There are other cases of strabismus which appear to be caused by certain portions of the retina becoming insensible; and in such cases, we should be very cautious, indeed, how we interfere, for it is quite possible that the removal of the deformity may render the patient's vision much less distinct than before."—*Dublin Quart. Jour. Med. Sci.*, Feb. 1847, from *Lancet* for July 7, p. 160.

49. *Strabismus and Partial Anurosis from thickening of Neurilemma of a portion of the Optic Nerve.*—HERN BÖHM relates the following interesting case. A lad 19 years of age, had external strabismus of right eye since his childhood. "At six years old this affection was attended with double vision, but without pain or other inconvenience. The globe then gradually protruded, and the pupil now turned upwards and outwards, and at nineteen his vision in that eye had decreased so much that he could scarcely distinguish one coin from another. He was advised against having the operation performed, and the cause of the disease was diagnosed to be a non-malignant swelling at the bottom of the orbit. As he died of consumption at Berlin, an opportunity was afforded for the following interesting dissection. The optic nerve, for something more than a quarter of an inch posterior to its insertion into the sclerotic, was normal, but behind that it swelled out to the size and shape of a large olive, which lay across the bottom of the orbit, and projected the globe forwards and outwards in the manner we have described. Behind this swelling it again assumed its natural size, and turning back through the foramen opticum into the cranium, continued natural through the remainder of its course. The swelling had an unnaturally hard feel, and, when cut across, was found to consist chiefly of the thickened neurilemma. Examined under the microscope the nervous matter was found unaltered. Swellings upon the nerves, in other parts of the body, are not unusual; but in the optic nerve it is a very rare occurrence indeed."—*Dublin Quart. Jour. Med. Sci.*, Feb. 1847.

50. *On a luminous appearance of the Human Eye, and its application to the detection of disease of the retina and posterior part of the eye.* By WM. CUMMING. (*Medico-Chirurgical Transactions*, vol. xxix.)—The luminous appearance of the eyes of cats, dogs, rabbits, oxen, sheep, and other animals, has long been known, and referred to the reflection of light by the tapetum; as also the reflection from the eye of the albino; the reflection produced by morbid deposits in and other changes of the retina; and from the deficiency of pigment in persons not albinos.

The object of this paper is to show that the healthy human eye is equally or nearly equally luminous as the eye of the cat, dog, &c., when observed under favourable circumstances, and the application of the abnormal appearance, or want of this luminosity, to the detection of changes in the retina and posterior part of the eye.

The reflection from the posterior part of the human eye may be seen, Mr. Cumming says, in the following manner: "Let the person whose eye is to be examined be placed at the distance of ten or twelve feet from a gas or other bright light; the rays of light must fall directly on his face; all rays passing laterally off his head must be intercepted by a screen, placed half way between the light and the eye examined. If the reflection be bright, it will be at once seen from any spot between the light and the screen.

"The following observations were made in two rooms; in one of which was a gas-light, the other completely darkened. The person whose eye was to be viewed was placed in the dark room, five feet from a half-closed door opening into this room; he directly faced the light, also at the distance of four or five feet from the door.

"The appearance of the reflection was in most cases extremely brilliant, when seen from a position between the door and light. In some, it was at once obvious with the door wide open; in others it was seen with great difficulty, and not till every ray of light passing to the side of the iris was carefully intercepted by the door on one side and the hand or a book on the other. The reflection was always seen much more readily and brilliantly, when the eye was turned slightly

to the side, and the rays of light passed through the pupil obliquely. On passing to the outer side of the door, the luminosity was seen with greater difficulty. In this position, it is necessary to have the eye turned to the side, to exclude all rays by the hand, except those passing directly to the eye. In this way, the reflection may be seen distinctly at the distance of eight inches.

"In the majority of cases, however, it may be seen as follows: Let the person under examination, sit or stand eight or ten feet from a gas-light, looking a little to the side; standing near the gas-light, we have only to approach as near as possible to the direct line between it and the eye to be viewed, at once to see the reflection. Or, in a dark room, a candle being placed four or five feet from the eye, if we approach the direct line between them we shall be able at once to see it in many cases. If solar light be admitted through a nearly-closed shutter into a dark room, the luminosity may be seen when the pupil is tolerably dilated, the patient standing five or six feet from the aperture, and the observer occupying the position before indicated.

"These then are the circumstances necessary for seeing the luminosity. a. That the eye must be at some distance from the source of light; the distance being greater in proportion to the intensity. b. That the rays of light diffused around the patient (and sometimes around the eye itself) should be excluded. c. That the observer should occupy a position as near as possible to the direct line between the source of light and the eye examined; hence it is sometimes necessary for the observer to stand obliquely, that his eye may approach nearer to the direct line.

"The appearance of the reflection itself not only varies much in colour and intensity in different persons, but also from the circumstances under which it is seen, viz., the greater or less intensity of light, the position of the eye examined, and the distance at which it is viewed.

"When the reflection is seen under the influence of a dim light, as that from a candle, or a few solar rays, a red lurid glare, like that from a dull coal fire, is observed, evidently proceeding from the bottom of the eye, and, though not distinctly concave, yet conveying the idea of concavity. The character of the reflection thus seen by a faint light, at the distance of two or three feet, is very uniform, and does not present much variety of tint.

"When the eye receives rays from a good bright light ten feet distant, and we stand near the light, the reflection is then seen extremely brilliant; presenting a fine metallic lustre, and varying from a bright silver or golden, to a decided red tint: the latter being the more usual colour. While viewing the reflection at this distance, it sometimes undergoes a distinct change, suddenly altering from a copper or red colour, to a silver tint: this happens sometimes in consequence of a slight movement of the eye, but not unfrequently is observed without any movement having taken place.

"Although the reflection is more readily seen in an eye with a large pupil, its lustre does not depend upon this circumstance. In two eyes with pupils of equal diameter, the intensity of the reflection frequently varied greatly. In one case, in which the reflection was very dusky in appearance, and the pupil small; atropine was dropped into the eye. I then observed that, though the extent of luminosity was increased, it still retained the same dusky hue. The greater facility with which the reflection is seen when the eye is directed slightly away from the light, appears to depend on the more patulous condition of the pupil.

"On approaching within a few inches of the eye, the reflection is not visible, for, before our eye can be brought within range of the reflected rays, the incident rays of light are excluded. On placing before the eye examined, a black card with an aperture the size of the iris, the intensity of the reflection was observed to be somewhat diminished.

"In cases in which the lens had been removed, the reflection was indistinct at a distance, but was rendered somewhat clearer by the aid of a double convex lens placed before the eye examined; but at two or three feet distant, the reflection was as obvious as in cases in which the lens was present.

"Among the cases I have examined, I have recorded indiscriminately the appearance of the luminosity in twenty persons with good and perfect vision, whose ages varied from a few months to sixty years. In sixteen cases the reflection was bright and very evident; in four, faint, and seen with difficulty; and in one it

was not seen at all; in the last case, the pupils remained small in the shade. If these observations are confirmed by other observers, we may say that the reflection ought to be seen in every healthy eye with a good-sized pupil."

Having pointed out the character of this reflection, and the mode in which it may be seen, Mr. C. next inquires into its source.

"The retina in the living eye," he observes, "is a perfectly transparent medium in contact with the choroid and vitreous body. The transparency of the retina is, however, no proof that it does not itself reflect many of the rays of light that impinge upon it, although the greater proportion are transmitted; the transparency of a structure being quite consistent with considerable reflection, but not with absorption of the rays of light; and this reflection would be rendered more obvious by the position of the choroid. The formation of images upon the retina, acknowledged by all, is at once a proof of its reflecting power.

"From these considerations, and the fact of the anterior layer of the retina consisting of a vascular plexus, and thinking the choroid with its pigment too dark to give such a reflection, my first impression was that the retina was the reflecting surface.

"Mr. Bowman, however, having suggested to me the greater probability of the choroid with the pigment being the reflecting structure, I commenced some experiments to determine this point. The reddish-brown colour of the pigment of the human eye has been fully recognized. Mr. Hunter clearly and fully points out the varieties in the depth of tint of the pigment. Entirely or almost wanting in the Albino, it is of a light brown or fawn colour in fair persons, while in persons of swarthy complexion it is proportionably dark, appearing to keep pace with the depth of colour of the rete-mucosum; being still darker in mulattoes and negroes.

"The brilliancy of the luminosity of the healthy eye appears to be in proportion to the light colour of the pigment. So evident is the reflection in the Albino, that in ordinary day-light the pupils present a reddish appearance. On placing a middle-aged man, an Albino, ten or twelve feet from a gas-light, the reflection was extremely vivid, and of a pinker colour than ordinary, while the light transmitted through the choroid and iris evidently increased the effect. On placing close to his eye a black card with an aperture a little larger than the pupil, the reflection was little brighter than that from the eye of a fair person examined side by side, but was of a more decided pink colour.

"In persons of fair complexion and blue or gray irides, it is generally more brilliant and more readily seen than in those of dark skin and irides. In the mulatto it is also dusky; but in them, as in persons of swarthy complexion, a silvery reflection is sometimes seen, and is, most probably, a reflection from the retina. In the Albino, this reflection produced by the vascular choroid, is most brilliant and lightest in tint, and, in proportion to the darkness of the pigment, its lustre is diminished, and the colour becomes more dusky.

"The posterior segment of an eye, the pigment being of the usual brown colour, was exposed to light concentrated by a lens upon it, and a brownish red reflection, of metallic lustre, was observed.

"I found, on holding an eye with the optic nerve towards the light, and looking through the pupil, that the light passing through the choroid was of a brilliant red colour, precisely resembling that reflected during life. I therefore obtained seven more eyes, each from a different subject, and found that the same red light was transmitted through the choroid. These cases, taken indiscriminately, leave no doubt that this is an appearance common to the human eye. Some months before my friend Mr. Dixon showed me an eye in which the same appearance was seen; at that time, however, we both supposed that this was an exception.

"This appears to me to be the best proof that the reflection is from the choroid with its pigment, viz., the exact resemblance of the rays transmitted through it to the reflection. But while I regard this as the principal reflecting structure, the light returned from the retina and concavity of the hyaloid body, would doubtless increase the effect.

"I have not yet seen the luminosity in the dead eye, but the non-injection of the choroid, and loss of transparency in the retina, sufficiently account for this.

"The reflection from these structures would be considerably increased in bril-

liancy, from the concentrating influence of the concave shape of the retina, and the focal distance of the lens.

"The establishment of the fact of a similar reflection from the healthy human eye to that from the eyes of animals, appears to me chiefly important in its adaptation as a mode of examining the posterior part of the eye. The retina and choroid hitherto concealed in the living eye, and little opportunity being afforded of examining their condition after life, in consequence of their diseases not terminating fatally, considerable uncertainty has attended the diseases ascribed to these structures; but the existence of this luminosity having been recognized, its non-existence, or abnormal appearance may enable us to detect changes in these structures heretofore unknown, or satisfactorily to see those which we only suspected. If we dilate the pupil by atropine, we have a means afforded of seeing the condition of the retina and choroid in every case. The cases I have examined in this way have confirmed the general impression that the retina is not frequently the seat of change in amaurosis; for, out of several cases of amaurosis, in which the non-opacity of the cornea, lens and humours allowed this mode of examination, I found but two in which the retina was so changed that the reflection was not seen."

MIDWIFERY.

51. *Effects of the Ergot of Rye on the Parturient female and her offspring.*—With the view of throwing some further light on the action and effect of the ergot, Dr. SAMUEL L. HARDY, of the Dublin Lying-in Hospital, has kept accurate notes of a large number of cases, in which this drug has been administered during parturition. Several of his observations are of considerable value.

Time at which the action of the ergot on the uterus commences.—From comparing tables which the author has drawn up, it appears that, in some cases, ergot acts on the uterus, so soon as seven minutes after its administration, whilst in others, a much longer period of time is required; but in the generality, from about ten to fifteen minutes may be stated as the average. In those cases where the children have been expelled alive, Dr. Hardy has always observed the action of ergot on the uterus, to commence within twenty-five minutes. On the other hand, when a longer period than this elapses before the uterus takes on action, the use of instruments has been necessary to perfect the delivery, or the children have been dead born. In some instances, the ergot has produced in the uterus a kind of tonic contraction, without any effective expelling pains. In accordance with what has been observed by others, the author has noticed that, in those cases where the ergot has acted beneficially, its exhibition is followed by strong expulsive pains, which gradually increase in frequency, so that, in fact, they may be said to run into each other, there being no distinct interval between them.

Effect on the pulse.—In nineteen cases of those which Dr. Hardy has recorded, there was a marked diminution in the frequency of the mother's pulse, following the administration of ergot, and this effect generally began to take place from about fifteen minutes to half an hour. In all these instances where the depression of the pulse occurred, the fetal heart underwent a similar change. Hence the author is led to inquire, is ergot a safe remedy in a case where the woman is greatly reduced by hemorrhage arising from relaxation of the uterus after delivery? He mentions a case bearing upon this point, where a draining had continued for several hours after the expulsion of the placenta, by which the patient was greatly weakened; the usual dose of powdered ergot was given, and was followed almost immediately after, by most alarming depression, requiring the administration of the most powerful stimulants. In several of the cases the depressed state of the circulation continued for several days, notwithstanding, in some instances, inflammation of the uterus followed delivery; and the uterine tumour not unfrequently remained much larger than natural, even where there was no reason to suspect the presence of inflammation of that organ.

Effects of Ergot on the fetal heart.—The effects of ergot on the fetal heart, is still

more remarkable than on the maternal pulse, and, in a practical point of view, deserves a much more serious investigation.

In a great majority of the author's cases, a diminution in the fetal heart's pulsations followed the administration of ergot. The period at which this effect begins to be produced, varies from about fifteen minutes to half an hour, sometimes a little sooner, and occasionally at a later period. The most common effect, and usually the first the author has observed, is a diminution in the frequency of the pulsations; this is succeeded, after some time, by an irregularity in its beats, which irregularity continues, more or less, until the sounds intermit, and at length, after a variable period, become quite inaudible. Dr. Hardy has been led by his observations to the practical inference that, in those cases where the number of the fetal heart's pulsations have been steadily reduced below 110, and at the same time, *with intermissions*, the child will be rarely, if ever, saved, although its delivery should be effected with the greatest possible speed. But the mere depression of the fetal heart below 110, *without intermissions*, is not, in itself, sufficient to cause this result, as instances have occurred where the number of pulsations has been still more reduced, (in one case as low as 56,) and yet by speedy delivery, and adoption of the usual remedies, the children have been saved. But in none of these cases was there a *steady, distinct, and well-marked intermission*. The knowledge of these facts points out the necessity of watching closely the state of the fetal heart, after the administration of ergot, as delay beyond a particular time cannot be allowed with impunity to the life of the child. Should the case, in other respects, be eligible for the application of the forceps or vectis, in order to save the child, it must be had recourse to within a certain period, which can only be known by the careful use of the stethoscope. The author's observation fully coincides with those of Dr. Beatty, who fixes the limit beyond which the child will rarely be born alive, at two hours. To this rule he has met with but three exceptions. But death of the fetus may occur long before the expiration of two hours. In two instances, the children were lost, although only twenty minutes in one, and twenty-five in the other, had passed from the administration of the ergot to their expulsion. In these instances, the depressing effects of the ergot are so great, that frequently after birth, a considerable time elapses before the children can be perfectly restored; and Dr. Hardy has observed, that infants born in a weak state, where no ergot was given to cause their expulsion, have been restored to animation with much less difficulty, than in those cases in which this medicine was administered during labour. Hemorrhage after the birth of the child, is an occurrence the author has never met with in any case where the uterus was sensibly affected by the ergot during labour.

With some few exceptions, the women had generally good recoveries. Of those who were attacked with inflammation, all recovered but two. One was a case of retained placenta, where the hand was introduced: this patient died of uterine phlebitis. In the second, there was inflammation of the peritoneum and uterus.

The children who were born alive, all, with one exception, did well. In this case, delivery was effected by the forceps, as the fetal heart had fallen so low as 100 from the effect of the ergot. This statement refers only to those cases where complete restoration was accomplished after delivery.—*Dublin Journ. Med. Sci.*

52. *Prolapsus of the Cord terminating favourably without instrumental interference*—Mr. Woonhouse mentioned to the Obstetric Society of Edinburgh (at the meeting 20th Jan.) a case of prolapsus of the cord, in which he had succeeded in saving the child by administering a large dose of ergot. The first stage of labour was almost fully over, when he detected the prolapsed cord. The pelvis was large and roomy, and the soft parts well relaxed. After failing to reduce the cord, he gave $\frac{3ii}$ of ergot, the pains at the time having got very feeble. They speedily became very active, and, after 20 minutes, the child was expelled alive.

Dr. Thompson stated, that in a case of twins, he found, on making an examination after the birth of the first child, that the cord of the second was prolapsed. He was considering what course he should pursue, when strong uterine contractions came on, and expelled the infant alive after a few pains.—*Monthly Journ. of Med. Sci.*, March, 1847.

53. *Spontaneous Amputation in a new-born Child.*—M. PAUL DUBOIS presented to the French Academy of Medicine, 16th March last, a child two days old, which presented remarkable and rare congenital lesions. Immediately after its birth, it was perceived that the middle and ring fingers of the left hand were reduced to the first phalanges; the free extremities of the latter were rounded, and covered over with skin, except at a small part, which still presented a wound, and showed the removal of the distal phalanges to have been recent. From alongside these small wounds, arose a slender but resisting filiform prolongation, larger than the wanting phalanges would have been, otherwise it might be considered as the remains of them.

A similar lesion existed in the second and third toes of the left, and also of the right foot. The last phalanges were wanting, and stumps replaced them, presenting central wounds and filiform appendages, as in the hand.

The left leg presented, a little above the malleoli, an obvious constriction, circular and straight, as though it had been produced by a ligature, but no vestige of such a thing was to be found. The great toe of the right foot offered, on a level with its first phalanx, a similar constriction. This alteration, and the removal of the toes, seemed to constitute two stages of the malady. Lastly, the right leg also presented a circular depression, having the same characters, and occupying the same position, as the constriction on the left leg, but much less marked. At the time of birth, no trace of inflammation existed around the mutilated parts; but since, and under the influence of the new conditions of external existence, a true inflammatory state had been set up.

The umbilical cord was but half its usual length; the membranes enclosing the child seemed to be constituted only by the chorion; at least, the amnion could not be distinguished. The placenta offered nothing remarkable. Setting aside the mutilations described, the child was well formed and fully developed.

The mother was not taken into the hospital until after the membranes had burst, and it was impossible to discover any trace of the deficient members.—*Lancet*, April 17, 1847.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

51. *Effects of the Vapours of Phosphorus on Workmen.*—M. CHEVALIER, on the presentation of a communication from M. Dupasquier, on the manufacture of chemical matches, and the action of the vapour of phosphorus, took occasion to remark, that in concert with Dr. Bricheveau and Boys de Loury, he had been engaged in an inquiry as to the condition of workmen thus employed, and had particularly consulted several manufacturers of phosphorus.

The results thus obtained, and which date back as far as the 16th of March, 1816, are as follows: 1. That workmen engaged in the manufacture of phosphorus are not subject to the caries of the teeth which has been noticed in those engaged in making matches. 2. That these workmen, when the rooms are filled with the vapours of phosphorus, are seized with cough, but it disappears with the removal of the cause. 3. That the manufacture of phosphorus does not give rise to any particular disease.—*Comptes Rendus*, Sept. 28, 1846.

T. R. B.

55. *Nicotine.*—M. SCHLOESING, a pupil of the "*Manufacture des Tabacs de Paris*," after stating the best mode of obtaining this substance, mentions the quantity of it contained in the tobacco of France and America.

Tobacco of

Lot contains 7.96 in the 100 parts of Tobacco dried; Lot and Garonne, 7.34; Nord, 6.58; ille et Vilaine, 6.29; Pas de Calais, 4.94; Alsace, 3.21; Virginia, 6.87; Kentucky, 6.09; Maryland, 2.29; Havana, less than 2 per cent.

It would appear from this table, that the kinds which contain most nicotine, are best adapted for the manufacture of snuff.

When tobacco in powder (snuff) is examined, it indicates a material loss of nicotine. The proportion is 2.04 in the 100 parts, showing that fermentation of the leaves has destroyed about two-thirds of it.

No. XXVII.—JULY, 1847.

Ammonia exists in snuff in the form of a salt; nicotine partly in the state of a salt and partly free, or entirely a sub-salt. It is to these two salts, that the property of *super exciting the mucous membrane of the nose* is to be ascribed.

M. Schloesing will continue his investigations.—*Comptes Rendus*, December 21, 1846. T. R. B.

56. *Poisoning in Java. The Gecko.* (From *Selberg's Travels in Java*.)—The Javan women are of an extremely jealous disposition, and have quiet and subtle means of revenging themselves upon their rivals. They are skilled in the preparation of poisons—of one especially, which kills slowly, occasioning symptoms similar to those of consumption. When a Javan perceives this, she submits herself to her fate, knowing well what is the matter with her, and rejecting antidotes as useless. And European physicians have as yet done little against the effects of the poison, whose ingredients they cannot discover with sufficient accuracy to counteract them. A medical man told Dr. Selberg that copper dust and human hair were amongst them, combined with other substances entirely unknown to him. The dose is usually administered in rice, the chief food of the Javans. Arsenic, another poison in common use, is sold in all the bazaars. This poisoning practice is not unusual among Liplap women married to Europeans, and who, although nominally Christians, possess for the most part, all the vices and superstitions of their Mahometan sisters.

While traveling in the Island of Madura, Dr. Selberg was seized with sudden and violent fever. He was kindly treated by his host, who on leaving at night, placed an open cocoa nut by his bed-side, a simple, but delightful fever draught. Awaking with a parched tongue and burning thirst, he sought the nut, but it was empty. The next night, the same thing occurred, and he could not imagine who stole his milk. He ordered two nuts and a light to be left near him; towards midnight, a slight noise attracted his attention, and he saw two small beasts cautiously and steadily approach, stare at him with their protruding eyes, and then dip their ugly snouts into his cocoa nuts. These free and easy vermin were *Geckos*, a species of lizard, about a foot long, of a pale grayish-green colour, spotted with red, having a large mouth full of sharp teeth, a long tail marked with white rings and sharp claws upon their feet. Between these claws, by which they cling to whatever they touch, is a *venomous secretion that distils into the wounds they make*. Dr. Selberg was well acquainted with these comely creatures, and had even bottled a couple, which now grace the shelves of a German Museum, but in his then feeble and half delirious state, their presence intimidated him, and fancying that if he disturbed their repast, they might transfer their attentions to himself, he allowed them to swill at leisure, until an accidental noise scared them away.—*Blackwood's Magazine*, March 1847. T. R. B.

57. *Remarkable English State Trials.*—Lord Campbell has recently published two additional volumes of his “*Lives of the Lord Chancellors of England*,” and in the course of his biographies, frequently speaks of the Trials in which these eminent men were engaged, previous to arriving at their high stations. Some of these are constantly noticed in our works on Medical Jurisprudence, and it is of some interest to know the opinion entertained by so eminent a lawyer concerning them. I quote a few scraps.

58. *Trial of Earl Ferrers before the House of Lords for murdering his steward.*—He was condemned by the unanimous verdict of his peers, and executed. Lord Campbell remarks (vol. v. p. 195), “Were such a case now to come before a jury, there would probably be an acquittal on the ground of *insanity*, although the noble culprit was actuated by deep malice towards the deceased, although he had contrived the opportunity of satiating his vengeance with much premeditation and art, and although the steps which he afterwards took showed that he was fully sensible of the magnitude and the consequences of his crime.”

Charles Yorke was Solicitor-General at this time, and along with Pratt, Attorney General (afterwards Lord Camden), was the public prosecutor. Lord Campbell says (vol. v. p. 398), “The Solicitor-General’s reply on this occasion was one of the finest forensic displays in our language; containing along with touching elo-

quence, fine philosophical reasoning on mental diseases and moral responsibility. 'In some sense' said he, 'every violation of duty proceeds from insanity. All cruelty, all brutality, all revenge, all injustice, is insanity. There were philosophers in ancient times, who held this opinion as a strict maxim of their sect, and, my lords, the opinion is right in philosophy, but dangerous in judicature. It may have a useful and a noble influence to regulate the conduct of men to control their inopotent passions, to teach them that virtue is the perfection of reason, as reason itself is the perfection of human nature, but not to extenuate crimes, nor to excuse those punishments which the law adjudges to be their due.'"

59. *The Douglas Cause.* (Vol. v. p. 290.)—"I believe the general opinion of English lawyers was in favour of the decision of the Court of Session in Scotland, but this was produced a great deal by Lord Mansfield's wretched argument and the very able letters of Andrew Stuart, the Duke of Hamilton's agent, whose conduct had been severely reflected upon. I once studied the case very attentively, and I must own that I came to the conclusion that the House of Lords did well in *reversing*. There was undoubtedly false evidence in support of the appellant, but it would have been too much in such a case to act upon the maxim 'false in one thing, false in all things,' so as to deprive him of his birthright from misconduct to which he was not privy. There seems to be no doubt that the Lady Jane, notwithstanding her advanced age, subsequently to the birth of the appellant, was pregnant and had a miscarriage; and insuperable difficulties attended the theory of his being the son of Madame Mignon. Being in possession of his *status*, I think the evidence was insufficient to deprive him of it, and the strong family likeness satisfactorily established, seems to prove that the conclusion of law concurred with the fact of his physical origin."

60. *Miss Blandy for poisoning her father.* (Vol. v. p. 442.)—"There was a verdict of guilty on the clearest proof of premeditation and design; but to show the worthlessness of dying declarations of criminals, and the absurdity of the practice of trying to induce them to confess, she went out of the world with a solemn declaration which she signed and repeated at the gallows, that she had no intention of injuring her father, and that she thought the powder would make him love her, and give his consent to her union with Captain Cranstoun."

61. *Trial of Spencer Cowper for the murder of Miss Stout.* (Vol. iv. p. 275.)—"This case occupied my attention some years since, for many days. I had nothing before me but the report of the trial and the comments on it, in Hargrave's State Trials, and I confess that the result on my mind has, in consequence of the apparent mystery and numerous circumstances unexplained, always been unfavourable to the characters, at least, of Mr. Cowper. At the same time I could find no satisfactory proofs negating the idea of suicide. Lord Campbell's account clears up the matter.

I beg those, who may take any interest in this remarkable trial, to read what I have stated in my work on Medical Jurisprudence, and the following will then be readily understood.

William Cowper (afterwards Lord Chancellor of England) and Spencer Cowper were the sons of Sir William Cowper, and natives of Hertford. At the time in question, William was already King's counsel, and he and his brother went the usual circuits, and of course, their native place was one of the county towns visited by them. Sir William and his eldest son were also both members of parliament for Hertford, and Spencer was thus under the necessity, says Lord Campbell, of showing, for the sake of the family interest in that borough, very marked attention to the electors, and their wives and daughters.

"Mr. Stout, the Quaker, had died since the last election, leaving his widow and an only child, an unmarried daughter, named Sarah, in affluent circumstances. The Cowpers still kindly took great notice of them, visited them at Hertford and invited them to the house of Sir William, in Hatton Garden. Spencer Cowper had been particularly serviceable to Mrs. Sarah, (as she was called,) in managing her pecuniary affairs, and although she was a very handsome young Quakeress and rather of a romantic turn, it seems now quite certain that he never made her any

improper overtures, or at all encouraged a fatal passion which she cherished for him."

After mentioning the finding of her body next morning in the river that flows through the town, and the fact that Spencer Cowper was the last person seen in her company the night before, our author adds, that suspicion fell upon him, but he appeared as a witness before the Coroner's jury and so far cleared himself, that they brought in a verdict that "she had drowned herself, being *non compos mentis*."

Two parties, however, were at work, from very opposite motives, planning measures which nearly brought him to the gibbet. An unfounded rumour was spread that she was pregnant and that she had made way with herself to conceal her shame. The Quakers, with Mead at their head, thought that such an imputation brought disgrace upon the whole of their society, and the body was disinterred several weeks after it had been in the grave. It was proved that she had died a virgin. The transition from this to the charge of murder against Spencer Cowper was a ready one, and the political opponents of the family eagerly seized upon it as a means of destroying the whig influence in the borough.

Cowper was accordingly committed to prison and afterwards tried for his life. Not being (as was then the practice and may be still) allowed any counsel, he made his own defence. He proved from the testimony of his brother William and his wife, and other witnesses of undoubted credit, that Miss Stout, *although he was a married man*, had conceived an uncontrollable passion for him, which he in vain had attempted to repress; that when in London, she wrote to him she was coming to visit him at his chambers in the temple, that he communicated this in confidence to his brother, and they agreed that as she was to dine that day with their father in Hatton Garden, William should say, that Spencer had gone into the country on business; that she had solicited him to lodge at her mother's house during the assizes, which he had declined; that on the 9th of March (five days before her death) she wrote him a letter, in which she plainly proposed that they should live together, adding this expression, "for come life, come death, I am resolved never to desert you, therefore, according to your appointment, I shall expect you." (Mr. and Mrs. William Cowper mentioned, on their examination, her frequent fits of despondency, her repeated expression of her wish to be rid of life, and of prognostications she had uttered of her approaching death.)

That on the day and evening in question, after engaging lodgings, he had visited her and heard her give the maid orders to prepare a bed for him, but as soon as she left the room, he positively refused to sleep there and immediately left the house. Mr. Cowper proved also in the clearest manner, that before the clock struck eleven, he had returned to his lodgings, and that he never went out again until next morning, after news of the catastrophe that had happened had been spread over the town.

An attempt was afterwards made to bring him again to trial, by the process called "an appeal of murder," sued out in the name of the heir at law of Sarah Stout. "There were various hearings on the subject, before Lord Keeper Wright, who called to his assistance the Master of the Rolls, Lord Chief Justice Treby, Lord Chief Baron Ward, and Mr. Justice Powell. William Cowper attended as counsel for his brother, and argued the case for him with great talent, his energy being stimulated, not subdued by the anxiety which he felt. No misgiving was ever felt by him, for a moment, respecting Spencer's innocence, but considering the perverted and infuriated state of the public mind, it was of the highest importance that the risk of a mistaken verdict should not be again run. Upon a capital conviction in this form of proceeding, the crown has no power to pardon. On account of an informality, the first appeal was quashed, and the lord-keeper, with the unanimous concurrence of his assessors, refused to issue a writ for another."

The strongest proof in favour of the general impression of his innocence is that some years afterwards, Mr. Spencer Cowper was made a judge of the court of Common Pleas.

62. *Coke and Woodburn Case*. (Vol. iv. p. 601.)—Lord Campbell does not admire the dicta of Lord Chief Justice King in this case. "Although substantial justice was done, and the decision has been since recognized, I must confess that it seems to me, that the law was rather strained." Arundel Coke Esq., a gentleman

of fortune in the county of Suffolk, and John Woodburn, his servant, were capitally indicted under the coventry act, (which enacts that if any person of malice aforethought, and by lying in wait, shall unlawfully slit the nose, &c., with intent to maim or disfigure, he shall be guilty of felony without benefit of clergy) for slitting the nose of Edward Crispe, Esq., Coke's brother-in-law, "with intent to maim and disfigure him." It appeared in evidence, that Mrs. Coke was entitled to a large estate, on the death of her brother, Mr. Crispe: that Mr. Coke, to get possession of this estate, resolved to murder Mr. Crispe; that with this view he inveigled Mr. Crispe at midnight into a churchyard, that there Woodburn, by Mr. Coke's orders, assaulted Mr. Crispe with a bill-hook, and gave him several wounds which were believed to be mortal; that he was left for dead in the churchyard, that he was nevertheless carried by some countrymen passing by to Mr. Coke's house, which was close by; that he recovered; and that one of the wounds he received was a cut across the nose.

The prisoners being called upon for their defence, Coke boldly contended that this case did not come within the Coventry Act. "This act, as was well known from its history and as was apparent from its terms, was meant to apply to the outrage of maiming or disfiguring a man when there was no intention of depriving of life, but who was afterwards, to gratify the malice of an enemy by carrying about with him, and exhibiting in society, the mark of disgrace set upon his person. The attempt to put a fellow creature to death might morally be a higher crime, but not being the crime described in the statute, it remained as at common law, only an aggravated misdemeanor, to be punished by fine and imprisonment. The legislature might hereafter be called upon to make such an attempt a capital offence, but a court of justice could not properly extend it to a statute passed entirely *alio intuitu*. Now here there clearly was no intent that Mr. Crispe should live ridiculous with a mutilated visage; the intention was not to disfigure, but to murder him for his estate; the wound which merely cut the nose was intended, like others inflicted on different parts of his body, to be mortal, and both the accused persons, when they left him in the churchyard, believed that their real object had been fully accomplished."

Lord Chief Justice King, however, ruled that if the prisoners maliciously inflicted a wound which amounted to a slitting of the nose and which disfigured the prosecutor, the case was within the act, although the real object was to murder, not to disfigure; saying among other things, "There are cases in which an unlawful or felonious intent to do one act may be carried over to another act done in prosecution thereof, and such other act will be felony, because done in prosecution of an unlawful or felonious intent. Here, although the ultimate intention was to murder, there might be an intermediate intention to disfigure, and one might take effect, while the others did not. An intention to kill does not exclude an intention to disfigure. The instrument made use of in this attempt, was a bill or hedging hook, which in its own nature is proper for cutting, maiming, or disfiguring." The means made use of to effect the murder must be considered, and the jury will say whether every blow and cut, and the consequences thereof, were not intended, as well as the end for which it is alleged these blows and cuts were given."

The prisoners were convicted and executed, but the case (says Lord Campbell) may be regarded as a pendant to that before Lord Chief Justice, Sir James Mansfield, where a man who gave a horse a draught for the purpose of fraudulently winning a wager on a race, was hanged for killing the horse, "out of malice to the owner," whose name he did not know.

63. *Unborn Child recognized by the law, so that estate may vest in it.*—The following decision of Lord Maclesfield, while Chancellor, is quoted by Lord Campbell (vol. iv., p. 524).

An ancestor of the late Sir Francis Burdett devised his estates, "in case he should leave no son at the time of his death," to his cousin Frances Hopegood, and died leaving his wife pregnant without his knowledge. She gave birth to a son, and the question was, which should have the estates? the devisee contending that the testator *left no son at the time of his death*, as it was then doubtful whether any child would be born of the widow and what the sex might be, so that the estates vested in the devisee and could not be divested by the son's subsequent birth.

But Lord Macclesfield, after consulting the Judges of the Court of Common Pleas, held that the infant, Sir Robert Burdett, though not actually born at the death of his father, yet in the eye of the law had existence in his mother's womb (*ventre sa mere*); as if a pregnant woman takes poison to kill her child and the child being born alive, dies of the poison, she is guilty of murder; an unborn child, therefore, may take as heir or devisee, and here it could not be imagined that the testator ever intended to disinherit his own son. So the estate remained with the Burdetts."

(This case is reported in 1 Peere Williams. *Sir Robert Burdett v. Hopegood*.) There is a somewhat similar one in *Pickering's Massachusetts Reports*, vol. xv. See *American Journal Med. Sciences*, New Series, vol. i., p. 253. T. R. B.

64. *Solium Temulentum*, by Professor PFAFF. (*Buchner's Repertorium*).—The seeds of Daruel were examined, in order to discover the alkaloid on which its poisonous qualities have been supposed to depend. No trace of it, however, could be found. By distillation with water, two kinds of ethereal oil were obtained; one specifically lighter, and the other specifically heavier than water, of a colour like clear water, and possessing a striking smell of the fusel oil of spirit.—*Pharmaceutical Journal*, October 1846. T. R. B.

65. *Death from taking Ammonia*.—Mr. Daniel Brough, a commercial traveller, had been drinking to excess, and upon his arrival at the Golden Ball, King street, where he lodged, he was followed into the parlour by two men, one of whom assaulted, and, it is said, robbed him. A Mr. Southwood, seeing Mr. Brough's sufferings from intoxication aggravated by the assault, went out and procured some liquid ammonia, in order to relieve him. Mr. Brough took some, and immediately exclaimed that his throat was on fire. He died that night. At the coroner's inquest, Mr. Harris, a chemist, said he sold Mr. Southwood four fluidrachms of liquor ammonia, that is, about four teaspoonfuls, that Mr. Southwood asked for the strongest and he gave it to him, believing that he wanted it for chemical purposes, and not to use as a medicine; ten or fifteen drops of another kind of ammonia, might have been beneficially administered to a drunken man. Dr. Lynch said the deceased died from inflammation of the epiglottis, caused by the ammonia, a strong caustic, passing over it. The verdict of the jury was, "Died from the effects of ammonia, administered in ignorance of the consequences."—*Atlas*, (*London newspaper*;) Feb. 13, 1847. T. R. B.

66. *Poisoning with Arsenic in Cayenne*.—I notice the following, simply to show the attention and care that is bestowed by the French authorities to obtain the highest possible evidence in cases of this description.

A negress, the mother of nine illegitimate children by a white individual, and with whom she had lived during twenty-five years, became unfaithful to him during his temporary absence. She was delivered of a child, called, in the language of the colonies, *capre*, i. e., the issue of a negress and a very dark mulatto, and she confessed to the midwife, that it was the product of a connection with a slave. The labour was painful, and the child, when born, quite feeble, but it had perfectly recovered when the midwife left. Two days after, she again visited the negress, and found the child violently convulsed, and apparently suffering much. It had vomited during the night after birth. Death soon followed, and it was buried the next day.

Suspensions of poisoning were soon excited. The body was disinterred, and the fluids found in the stomach were submitted to the examination of several medical men in the colony, but they declared themselves unable, with the means in their power, to state that poison had been employed.

Meanwhile, the house was searched; powders were found; the linen stained with meconium, was also procured, with other matters. Having now obtained the apparatus of Marsh, the physicians tested the suspected substances with it, and found, in all and every one, including the fluids of the stomach, proofs of the presence of large quantities of arsenic.

The judge, however, in consequence of the uncertainty of the first report, determined to forward a portion of the suspected matter to Paris, for further investi-

gation, and a commission, consisting of Chevalier, Bois de Loury, and Flandin, were appointed to make the examination. They reported that the animal matter obtained from the carbonization of the liver, heart, lungs and kidneys, contained a large proportion of arsenic; so also, with the intestines and the fluids in them, and also with the meconium.

The result of the trial is not given.—*Gazette des Tribunaux*, December 2, 1846.
T. R. B.

67. *Softening of the Mucous Membrane of the Stomach.* (Review of Dr. Gross' Elements of Pathological Anatomy.)—"In turning over the writer's chapter on post-mortem softening of the mucous membrane of the stomach, our attention is attracted by two statements; first, it is not correct to affirm that Louis regards this state as one produced during life, and 'caused by a high state of inflammatory irritation.' He *did* once so regard it, no doubt, but in the second edition of his work on typhoid fever, (published so far back as 1840,) he distinctly renounced his error, and made due acknowledgement of the truth of Dr. Carswell's notions. Secondly, (and this is much more important,) Dr. Gross states that 'if the gastric juice be neutralized by a small quantity of magnesia, no softening, whatever, will happen in the stomach of an animal that has just been killed,' and this statement is of, at the least, excessively doubtful accuracy. We are well aware that the proposition is Dr. Carswell's, but it was the business of Dr. Gross to show that others (Drs. Simpson and Imlach) have found that neutralization of the acid does *not* prevent solution. Admitting this, the admission by no means throws any shadow of doubt on the general truth of the idea, of the cadaveric nature of the change, but it constrains us to look for the solvent agent in some other element of the gastric secretion, besides its acid or acids."—*British and Foreign Medical Review*, January 1846.
T. R. B.

68. *Formation of Alcohol in the system?*—"MITSCHERLICH has given it as his opinion, that the sugar swallowed by animals may be converted into alcohol, in the intestines or vessels into which the absorbed food passes. The possibility of this change, it is true, cannot be denied, but there is one objection to the probability of the alcohol remaining for any length of time in this form in the body. That the temperature of an animal would immediately tend to convert it into acetic acid. There is a curious fact which we have met with, and which would appear to corroborate the suspicion of Mitscherlich: it is a circumstance, related in a note by the late Dr. Oudney, in his African travels. 'Several of our camels are drunk to-day; their eyes are heavy and want animation; gait staggering, and every now and then falling, as a man in a state of intoxication. It arose from eating dates after drinking water; these probably pass into the spirituous fermentation in the stomach.'"—*Ibid.*, in the *Review on the Food of Animals*.
T. R. B.

69. *Coffee as an antidote to Acetate of Morphia.* (*Journal de Pharmacie*, February, 1847.)—An invalid took at one dose, ten grains and nearly eight-tenths of acetate of morphia; thirty grains of emetic tartar were exhibited without occasioning vomiting; after a lapse of three hours, and not till then, and when the patient was perfectly comatose, a strong infusion of coffee with the grounds was given. In the course of twelve hours, the invalid took about eleven and a half ounces of coffee; the coma ceased, and he recovered.

This fact proves, among a hundred others, that even in the worst cases of poisoning, the medical man should never despair of the recovery of his patient. In the above described case, in spite of a very strong dose of poison, and notwithstanding the absence of all assistance during three entire hours, and although it was impossible to evacuate any portion of the morphia, the patient recovered. If a similar accident should again occur, vomiting should be immediately attempted; if this fail, the stomach pump should be employed, and then, concentrated coffee should be administered.—*London, Edinburgh, and Dublin Philosophical Magazine*, April 1847.
T. R. B.

70. *On the Changes effected in Hydrated Peroxide of Iron when kept in water.* By M. G. C. WITTSTEIN. (*Journal de Pharmacie*, February 1847.)—It is well known, that

a solution of persulphate or perchloride of iron, gives a reddish-brown precipitate with ammonia; it is flocculent and very bulky, and dissolves perfectly in cold acetic acid. It does not, however, appear to be known, that this precipitate, when kept under water, and without having been previously dried, almost entirely loses its property of dissolving in acetic acid, as if it had been dried. Some other organic acids, which readily and completely dissolve recently precipitated peroxide of iron, such as tartaric and citric acids, &c., also dissolve a much smaller quantity of the oxide which has been kept under water. M. Wittstein states that some researches which he has made on this subject, have afforded him very satisfactory results.

If the recently precipitated and washed oxide be examined by the microscope, it will be seen to be composed of amorphous globules, among which no crystals are perceptible; on the contrary, the precipitate which has been long kept under water, appears to be entirely crystalline; the small fragments of crystal are of a deep yellow colour, and slightly translucent. The author states that he is not aware of the time required to convert the amorphous into the crystalline peroxide; but the precipitates on which he made his experiments, had been prepared more than two years previously. He thinks, however, that the transformation had taken place for a considerable time; for he remembers to have remarked that in six months the precipitate had altered its appearance, and become more compact. The hydrate, moreover, in assuming the crystalline form, loses half the water which it contains.

The difficulty, then, which attends the solution of hydrated peroxide of iron that has been long kept under water, depends upon two causes, the crystalline form and partial dehydration. It results from what has been above stated, that the peroxide of iron, in order that it may be dissolved by the acids named, and weak acids in general, ought to be employed soon after precipitation. It is probably not indifferent that the peroxide of iron employed as an antidote to arsenic, should be recently precipitated; at all events, preference should be given to recently precipitated oxide, and it will be proper to renew it every six months, or annually. It is not requisite, entirely to reject the hydrate which has been kept; it may be dissolved in hydrochloric acid, and again precipitated by ammonia. *Ibid.*

T. R. B.

71. *Datura Sangvinea*, (R. Pav.)—To this, the natives give the names *Huacacahu*, *Yerba de Huaca* or *Borachero*, and they prepare from its fruit a very powerful narcotic drink called *tonga*. The Indians believe that by drinking the *tonga* they are brought into communication with the spirits of their forefathers. I once had an opportunity of observing an Indian under the influence of this drink. Shortly after having swallowed the beverage he fell into a heavy stupor; he sat with his eyes vacantly fixed on the ground, his mouth convulsively closed, and his nostrils dilated. In the course of about a quarter of an hour his eyes began to roll, foam issued from his half-opened lips, and his whole body was agitated by frightful convulsions. These violent symptoms having subsided, a profound sleep of several hours succeeded. In the evening I again saw this Indian. He was relating to a circle of attentive listeners the particulars of his vision, during which, he alleged, he had held communication with the spirits of his forefathers. He appeared very weak and exhausted.

In former times the Indian sorcerers, when they pretended to transport themselves into the presence of their deities, drank the juice of the thorn-apple in order to work themselves into a state of ecstasy. Though the establishment of Christianity has weaned the Indians from their idolatry, yet it has not banished their old superstitions. They still believe that they can hold communications with the spirits of their ancestors, and that they can obtain from them a clue to the treasures concealed in the *huacas* or graves; hence, the Indian name of the thorn-apple—*huacacahu*, or grave plant.—*Tschudi's Travels in Peru*, American Edition, p. 188.

T. R. B.

72. *Poisoned Weapons of the Peruvian Indians*.—Among many Indians, particularly in the western and northern districts of the Pampa del Sacramento, the *Pocuna* is a weapon much used in hunting. It is made of a long reed, and measures eight

or ten or even more feet. At one end are fixed two teeth of a javeli or white-lipped peccary, on which the reed is rested when taking aim. The arrows, which are only one and a half or two inches long, are made of the thick part of a strong cactus stem. In general their small arrows are poisoned, for otherwise the wound would be too inconsiderable to kill even a little bird. The poison for arrows differs with almost every tribe, and very mysterious ceremonies are observed at its preparation. On this account the art of preparing it and the ingredients employed are only very partially known to Europeans. Their elements are obtained from several plants not yet defined botanically, among which the *Apikuasca* and poison capsicum are much resorted to. Infusions of the leaves of a very strong kind of tobacco and of the Sanano and of Euphorbiaceæ are also taken. Some modern travellers, contrary to the testimony of the oldest writers on Peru, have asserted that no animal substance is employed in the poison for arrows. I am, however, enabled to state, on the authority of an Indian who has himself often made the poison, that not only the black and very poisonous emmet (*Cryptalereo atrato affinis*) but also the teeth of the formidable serpent known to the Indians by the name of Minumaru or Jergon (*Lachesis picta*) are used for that purpose.

The wound of the poisoned arrow is fatal and rapid. Men and large mammalia die in about four or five minutes after receiving the wound; the smaller mammiferous animals and birds in two minutes. The blow-reed sends these deadly arrows with great certainty to the distance of thirty-two or thirty-six paces. Hunting with the blow-reed must be long practised in order to acquire dexterity in its use, and great caution is required to avoid being self wounded by the small sharp arrows. An example came to my knowledge in the case of an Indian who let an arrow fall unobserved from his quiver; he trod upon it and it penetrated the sole of his foot; in a very short time he was a corpse. *Ibid.*, p. 285. T. R. B.

73. *Infanticide in Madagascar.* (From Madagascar, Past and Present. By a Resident).—Infanticide of the most atrocious character pervades the land. "The contrivances resorted to for the destruction of infants, when once doomed by the astrologers to die, are not the least atrocious features distinguishing this dark page in the history of the people under our notice. Thus a common *modus operandi* for the attainment of this end is that of exposing the unconscious babe in a narrow passage, through which a herd of cattle is furiously driven, and by the feet of which it is scarcely possible to avoid being mangled and tortured by a gradual death; at other times it is suspended by the heels, whilst its face is held downwards in a pan of water until suffocation ensues; or, still more horrible to relate, it is sometimes buried alive, with the head downwards, in a pit especially dug for the occasion. And this atrocious murder is in regular order commanded under the Queen's authority to be perpetrated by the father or nearest relative of the infant."—*London Literary Gazette*.

T. R. B.

74. *Amusement on the Effects of the Inhalation of Ether on animals and man.*—The phenomena produced by the inhalation are the same on animals as on man. They exhibit all the marks of intoxication; they fall without the power of raising themselves, become in-ensable to all operations performed on them, and either recover soon when the experiment ceases, or sink if it be prolonged.

The arterial blood, instead of being red, is found nearly black, analogous to venous, but this change only occurs at an advanced stage of inhalation. As soon as the breathing of it is stopped, the arterial blood resumes its natural colour.

If the animal dies the blood is black and limpid. Flaudin analyzed it immediately after death and detected the presence of ether. (During life it was impossible to inflame the expired gases.) The muscles also, when divided at an advanced stage of the inhalation, retracted but little, while the flesh itself was observed to have somewhat lost its colour.

The internal viscera were generally congested. The heart is greatly distended, resembling that of animals who die from the accidental introduction of air into the veins. The right auricle and ventricle contain a large quantity of black limpid blood. The lungs are of a deep red and their parenchyma of a similar colour. The liver is gorged with black blood, the kidneys are violet from the quantity of blood in them. The spleen, on the other hand, is of its ordinary size. The vessels

of the dura mater are full and the pia mater is quite injected. The cerebral pulp is generally natural, but the cerebro-spinal fluid appeared to be less abundant than in the natural state.

The lesions, viewed together, appear to Amussat to indicate that death is attributable to a species of asphyxia caused by the penetration of the ether into the blood, or as he expresses it in a subsequent note, that the venous blood is thus prevented from becoming red.—*Comptes Rendus*, Feb. 22, 1847. T. R. B.

75. *Feigned Diseases detected through the inhalation of ether.*—The conscripts in France are still ingenious in feigning diseases in order to escape from military duty. M. BAUDENS stated two instances, one of simulated and the other of real infirmity, in which the inhalation of ether was the DETECTING agent.

A soldier of the 25th regiment, who had been in service for eighteen months, presented himself with an apparently severe spinal disease. The back was bent almost in the form of a semi-circle, and when placed on a table, in the recumbent posture, the lumbar region was the only part that touched it. Possibly by allowing him to remain a sufficient length of time in this state, the contractility might have yielded, but M. Baudens forbade that he should be handled, and even directed a bolster to be placed under his head, as a means of support against fatigue.

In four minutes after inhaling the ether insensibility came on, and to this soon succeeded a complete relaxation of the limbs. The bolster was gently withdrawn, and the head, neck, shoulders and back in regular succession descended in close contact with the table by their own weight, so that he lay, in the words of the reporter, *a-plomb*. The deceit was manifest.

In the second case, a new recruit applied for a discharge on the ground of having a complete anchylosis of the coxo-femoral articulation of the left side. On moving the limb there was a spontaneous contraction which seemed to be voluntary, and this caused suspicion. The patient readily submitted to the test of the ether. In five minutes symptoms of somnolency began to show themselves, and in eight the insensibility was complete, but the contraction still continued, nor was there a complete relaxation of the muscular system until at the end of twelve minutes. On moving the limb at this time, the fact of a complete anchylosis was perfectly established. It was, in fact, perfectly impossible to make any motion with the femur, without embracing that of the whole pelvis. No question remained as to the propriety of discharging this person.—*Comptes Rendus*, March 8, 1847.

T. R. B.